MPEG4 Pentaplex Standalone DVR

[4 / 8 / 16 Channel DVR]

V 2.36

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SAFETY WARNING AND CAUTION

TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT OPEN COVERS.
NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Please be aware of the following precautions before installing the DVR.

- **Avoid any place with moisture, dust, or soot.**
- **Avoid any place with direct sunlight or heating appliances.**
- **Keep the product away from electric shock or magnetic substances.**
- **Avoid high or low temperature.**
  (Recommended operation temperature is between 0°C ~ 40°C).
- **Do not place any conductive material through the ventilation.**
- **Turn off the system before installation.**
- **Ensure enough space for cable connections.**
- **Place the system on a solid surface with sufficient air ventilation.**
- **Avoid any surface that vibrates.**
- **Placing the system near electronic devices such as radio or TV may cause breakdown to the product.**
- **Do not disassemble the product without an assistance from the manufacturer.**
- **Do not place any heavy object on the system.**

Note This equipment has been tested and found to comply with the limits for a CLASS A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

PLEASE READ THIS MANUAL THOROUGHLY FOR EFFECTIVE AND SAFE USAGE OF THE DEVICE.

SAFETY WARNING AND CAUTION

The following are warning and caution statements for the safety of the users and for the prevention of any property damage. Please read below thoroughly.

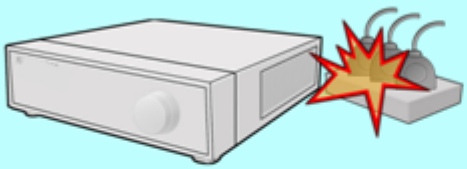
Warning and Caution signs

Warning If you are not aware of this warning, you may be injured or be killed.	**Caution** If you are not aware of this warning, you may be injured or cause property loss.

Warning

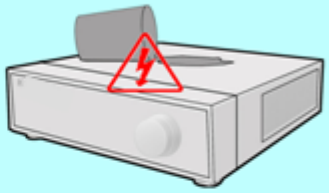
Turn off the system before installing the system. Do not plug in several electric devices to the same outlet.

- This may cause heating, fire, or electric shock.



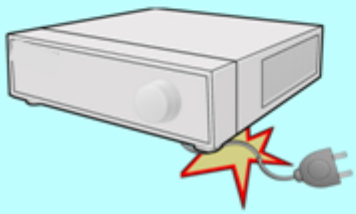
Do not place any liquid container on the system, such as water, coffee, or beverage.

- If liquid is poured onto the system, it can cause a system breakdown or cause fire.



Prevent power cable from being severely bent or pressed by a heavy object.

- This may cause fire.

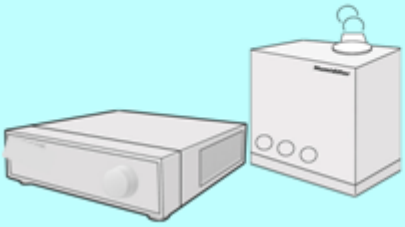


Clean the dust around the system on regular basis. When cleaning the system, always use dry cloth. Do not use wet cloth or other organic solvents.

- This may damage the surface of the system and can cause system breakdown or electric shock.

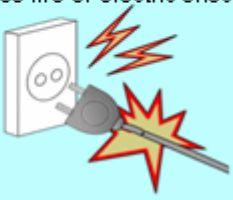
Avoid any place with moisture, dust, or soot.

- This can cause fire or electric shock.



When pulling the power cable from the plug, do so gently. Do not touch the plug with wet hands and avoid using the plug if the holes on the outlet are too loose.

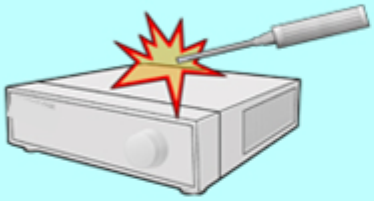
- This may cause fire or electric shock.



Warning

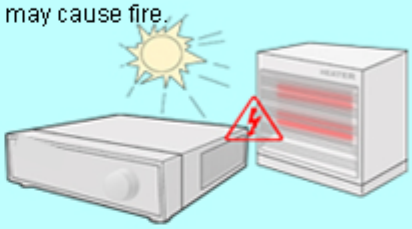
D not attempt to disassemble, repair, or modify the system on your own. It is extremely dangerous due to high voltage running through the system.

▪ This may cause fire, electric shock, or serious injuries.



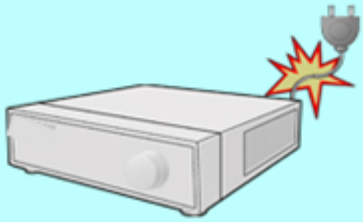
Install the system in a cool place without direct sunlight and always maintain room temperature. Avoid candle light and heat-generating devices such as heater. Keep the system away from places where many people pass.

▪ This may cause fire.



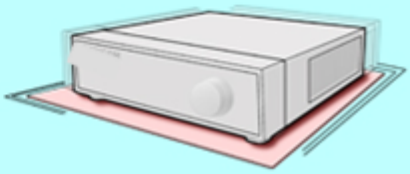
Check for any danger signs such as moist floor, loosened or damaged power cable, or unstable surface. If you encounter any problems, ask for assistance from your dealer.

▪ This may cause fire or electric shock.



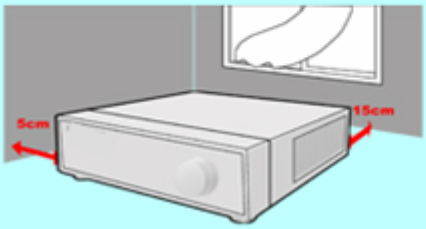
Install the system on a plain surface with sufficient air ventilation. Do not place the system on elevated surface.

▪ This may cause system breakdown or serious injuries.



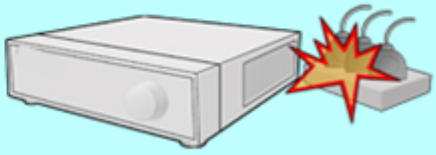
Keep at least 15cm between the back of the system and a wall for the cables connected into the system. Otherwise, cables may be bent, damaged, or cut.

▪ This may cause fire, electric shock, or injuries.



The power outlet must be placed on a ground, and the voltage range must be within 10% of the voltage rate. Do not use the same outlet with a hair dryer, iron, refrigerator, or any heating appliances.

▪ This may cause fire, heating, an electric shock.



Warning

When the system's battery is deplete, you must change it with the same or equivalent type of battery specified by the manufacturer. Depleted batteries should be discarded according to manufacturer's instructions.

- This may cause an explosion.

If the system's HDD exceeded its life span, you may not be able to recover any data stored inside the HDD. If the video on the system screen appears 'damaged' while playing a recording stored inside the system's HDD, it must be replaced with a new one. Ask for an engineer's assistance for HDD replacement from your dealer.

- The manufacturer is not responsible for deleted data caused by user's mishandling.

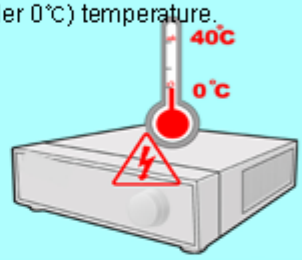
⚠ Caution

Do not install the system in a place with high magnetic, electric wave, or wireless devices such as radio or TV.

- Install the system in a place without magnetic objects, electric frequencies, or vibration.

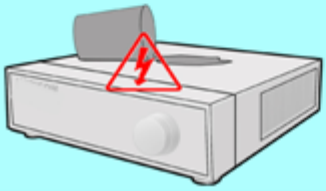
Install the system in a place with appropriate moisture and temperature level.

- Avoid installing the system with high (over 40℃) or low (under 0℃) temperature.



Prevent any substances from being inserted into the system.

- This may cause system breakdown.

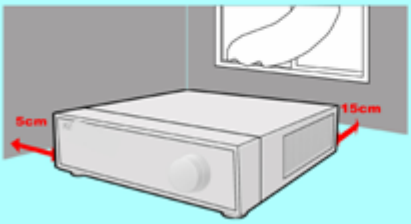


Do not place any heavy object on the system.

- This may cause system breakdown.

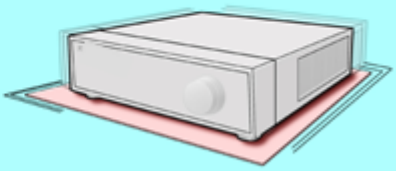
Install the system in a place with sufficient air ventilation.

- Keep at least 15cm distance between the back of the system and a wall, and at least 5cm distance between the side of the system and a wall.



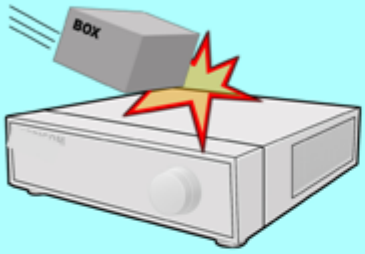
Install the system on a stable and leveled surface.

- The system may not operate properly.

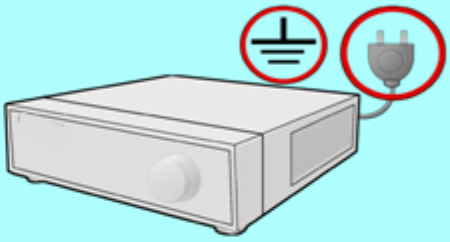


Caution

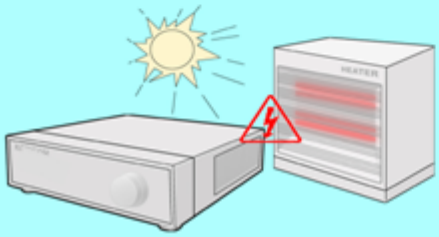
The system can be damaged from a strong impact or vibration. Avoid throwing objects within the vicinity of the system.



The outlet must be placed on the ground.

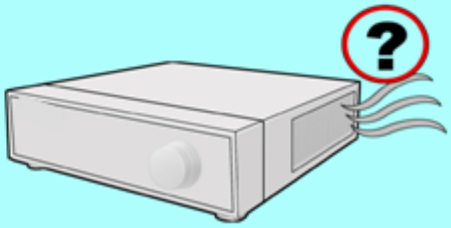


Avoid direct sunlight or any heating appliances.



If there is strange sound or smell, unplug the power cable immediately and contact the service center.

- This may cause fire or electric shock.



Ventilate the air inside the system operation room, and tighten the system cover firmly.

- System breakdown may be cause by inappropriate environment.

It is recommended to use AVR (Automatic Voltage Regulator) for stable power supply.

It is recommended to coil the core-ferrite around the connector of the system to avoid electromagnetic interference.

In order to maintain stable system performance, have your system checked regularly by the service center.

- The manufacturer is not held responsible for system breakdown caused by user's mishandling.

CHAP 1. INTRODUCTION

1. Overview

Digital Video Recorder (DVR) is the latest in surveillance technology that offers full digital recording, remote surveillance access, remote device control and more. The DVR system is a computerized surveillance system that combines all the features of a traditional videotape system by integrating a color quad processor, motion sensors, multiplexer, pan & tilt controls, time-lapse recorder and accessories to one unit. DVR images are stored on a Hard Disk Drive (HDD). This not only preserves the picture quality in its original state, but also allows fast data retrieval and larger storage capacity.

Unlike time-lapse VCRs and low-end DVRs, Pentaplex DVRs allow live-view, back-up of recorded Audio/Video, playback of recorded video footage and remote access through internet while in recording mode simultaneously. DVRs are used in mission critical environments where security systems are on and it would be dangerous for the security officer to turn off recording just to view recorded data.

Our new Pentaplex DVRs can meet any request from the industry and the customers with high quality and reliability, which will satisfy all of you and bring a big smile to you.

2. Common features

- Real-time 480/240/120fps (16/8/4CH) live display & 240/120/120fps (16/8/4CH) recording & playback
- Pentaplex : simultaneous Live, Recording, Playback, Backup, Network transmission
- Small recording file size using MPEG4 Video and G.723 Audio technology
- Adjustable recording frame rate for each channel
- Video backup directly to AVI format for easy viewing or to MP4 format for image authentication
- Support Authentic Image Player
- High speed network transmission with Full Screen Mode and Each Camera Mode
- Dynamic / Static IP address support, Own Client (NetViewer) / Web Browser (WebViewer) support
- Remote Recording, Still Image Capturing and Printing via network
- Multiple DVRs and Multiple Clients support for CMS application
- PTZF camera control by RS-485 and via Network
- Independent color adjustment for each camera input and VGA output
- Mouse and IR Remote control unit for user interface
- Self-diagnosis system and Hardware Watchdog : error checking and restoring functions
- Powerful event search function (Search by manual, schedule, motion, sensor, network or all)
- Pre-Alarm Recording for motions and sensors ALL-CH recording
- Protect Video/Audio files from HDD Overwrite
- System & Event Log files management
- Configuration data copy to other channels for easy setup
- Configuration data Export / Import for easy installation of multiple DVRs
- CD (or DVD)-Burner, USB and Network for data backup
- Composite Video, S-Video and VGA output

CHAP 1. INTRODUCTION

3. Specifications

Category		4 CH	8 CH	16 CH
Video	Input	4 BNC, 1V 75 Ohm	8 BNC, 1V 75 Ohm	16 BNC, 1V 75 Ohm
	Output	2 CVBS, S-Video, VGA		
	Auto-Loop Throughout	4 BNC, 1V 75 Ohm	8 BNC, 1V 75 Ohm	16 BNC, 1V 75 Ohm
Audio	Input / Output	2 x RCA (1 in, 1 out)		5 x RCA (4 in, 1 out)
	Recording Mode	G.723 Compression/Decompression		
Display	Display FPS (NTSC/PAL)	120 / 100 FPS	240 / 200 FPS	480 / 400 FPS
	Display Resolution	720 X 480 (NTSC), 720 X 576 (PAL)		
	Screen Split Mode	Full, 4 Split	Full, 4 / 9 Split	Full, 4/9/16 Split
	PIP and Zoom	1 / 2 / 3 PIP, Zoom		
Pentaplex Mode		Simultaneous Live, Recording, Playback, Backup, Network		
Recording	Video Compression	Real-time full duplex MPEG4 hardwire codec		
	Frame rate	Adjustable frame rate for each channel		
	Video Resolution	NTSC : 720x480, 720x240, 360x240, PAL : 720x576, 720x288, 360x288		
	Recording Ways	Manual, Schedule, Event (internal motion, external sensor), Network driven		
	Recording FPS (NTSC/PAL)	Up to 120 / 100 FPS		Up to 240 / 200 FPS
	Image File Size	NTSC : 1~12KB, PAL : 1~15KB		
	Internal Hard Drives	EIDE, MAX 2 HDDs supported, Unlimited HDD Capacity		
Remote Monitoring / Control		Dynamic / Static IP support, Own Client / Web Browser support		
		Client software for Remote View & Full Control		
		Multi DVR & Multi Client support		
		Each Camera Mode	Full Screen Mode or Each Camera Mode	
Playback	Playback Screen Mode	Full, 4 Split	Full, 4 / 9 Split	Full, 4//9/16 Split
	Search Mode	Search by Manual, Schedule, Motion, Sensor, Remote REC or Date/Time		
Alarm Control	External Sensor Input	4CH NC / NO	8CH NC / NO	16CH NC / NO
	Alarm Output	Internal Buzzer, OSD, Internal Relay (Combined with External Device)		
	Alarm Setup	On/Off		
Network	Protocol	TCP/IP; RJ-45		
	Resolution	Full D1, Half D1, CIF	Full D1, Half D1, CIF, QCIF	
	Remote Control	Fully functional remote client software		
	Viewer	Own Application or Web browser		
	Recording	MPEG4 / AVI Recording, JPEG Still image Capturing		
Data Backup		Ethernet, CD/DVD-Burner, USB 2.0		
		AVI format for easy viewing, MP4 format for image authentication		
Others	Protect Video / Audio files	Protect Video / Audio from HDD overwrite		
	Configuration File / Data Copy	Configuration file Import / Export using USB, Setup data copy to other cameras		
	Control	Buttons, IR Remote Control, USB Mouse, Ethernet and RS-485 for PTZF Camera		
	Event Log & Pre-Alarm Record	System and Event Log management, Pre-recording for Event (Motion, Sensor)		
	Power Supply & Dimensions	DC 12V / 5A, 430 x 358 x 75 mm (17 x 14 x 3 inch)		
	Weights	5.1 Kg (11.3 lbs)	5.3 Kg (11.7 lbs)	5.7 Kg (12.0 lbs)
	Approval	FCC, CE		

CHAP 1. INTRODUCTION

4. Contents

Please make sure the following parts are included with the main DVR when you open the product package.

Parts	Quantity
DVR	1 unit
DC Power Adaptor	1 pc
Power Cable	1 pc
Remote Controller	1 pc
Batteries	2 pcs
User's Manual and Install CD	1 pc
LAN Cable	1 pc

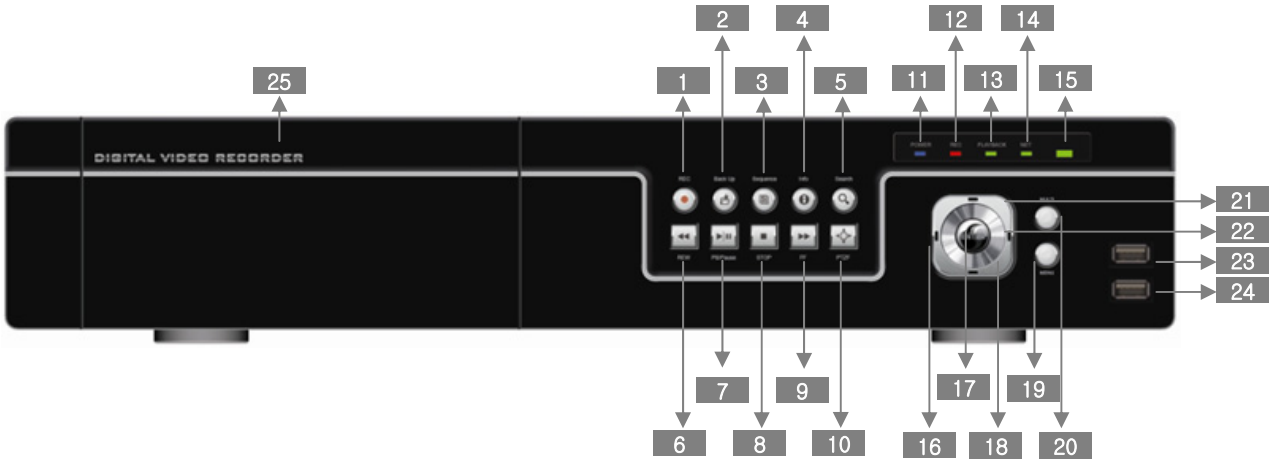
We strongly recommend you to fully understand this user's manual before installation.

Note This equipment has been tested and found to comply with the limits for a CLASS A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

PLEASE READ THIS GUIDE BOOK THOROUGHLY FOR EFFECTIVE AND SAFE USAGE OF THE DEVICE.

CHAP 1. INTRODUCTION

5. Front Panel



1. REC button
• To start and stop manual recording

2. Back Up button
• To copy recorded video/audio from hard drive to CD/DVD or USB

3. Sequence button
• To display videos in sequence mode
• If you press Sequence button, channels will be automatically switched as follows.
Ch1 -> Ch2 -> Ch3 ->….-> Ch14 -> Ch15 -> Ch16 -> Multi channel -> Ch1 -> Ch2 …

4. Info button
• To show system information of DVR

5. Search button
• To search recorded video and audio

6. REW button
• It supports REW1, REW2 and REW3 for fast rewind

7. PB/Pause button
• To play and pause the recorded video/audio

8. STOP button
• To stop playback

9. FF button
• It supports FF1, FF2 and FF3 for fast forward

10. PTZF button
• To control Pan, Tilt, Zoom and Focus of remote camera through RS485 port

CHAP 1. INTRODUCTION

11. Power LED
To indicates DVR power on status

12. Rec. LED
To indicates recording mode

13. Playback LED
• To indicates playback mode

14. Net LED
• To indicated network connected

15. IR Remote controller sensor

16. Left button
• To go left in menu navigation

17. Enter button
• To select or change the setting value in menu navigation

18. Down button
• To go down in menu navigation

19. Menu button
• To access system setup menu

20. Multi button
• To change the display mode among full and various split screen

21. Up button
• To go up in menu navigation

22. Right button
• To go right in menu navigation

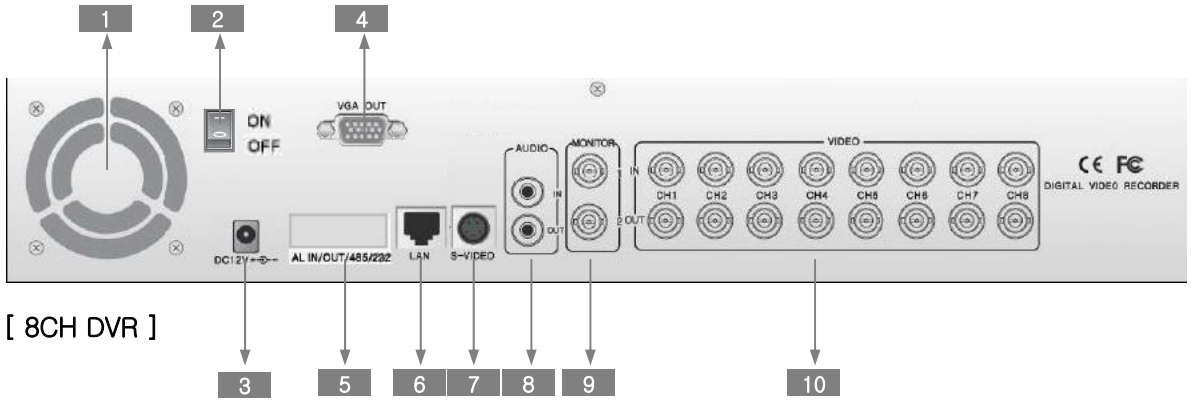
23. USB 2.0 Port 1
• To connect mouse or USB memory device **(Some USB devices may have compatibility issue)**

24. USB 2.0 Port 2
• To connect mouse or USB memory device **(Some USB devices may have compatibility issue)**

25. CD (or DVD) Burner
• To backup video/audio data in AVI format **(Some blank CD/DVD may have compatibility issue)**

CHAP 1. INTRODUCTION

6. Rear Panel



[8CH DVR]

1. Cooling Fan

2. Power Switch

3. DC Power Input

4. VGA output

5. RS485 (PTZF control), Sensor inputs, Alarm output

16CH	16	G	15	14	G	13	12	G	11	10	G	9	8	G	7	6	G	5	4	G	3	2	G	1	NC	C	NO	A+	A-
8CH													8	G	7	6	G	5	4	G	3	2	G	1	NC	C	NO	A+	A-
4CH																			4	G	3	2	G	1	NC	C	NO	A+	A-

16 ~ 1, G : Each channel sensor inputs, Ground (common) for sensors
NC, C, NO : Alarm output (Normal close, Common, Normal Open)
A+, A- : RS485 for PTZF control

6. Ethernet port

7. S-Video output

8. Audio input / output

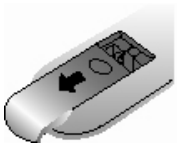
9. Composite Video outputs

10. Cameras inputs / Loop-through outputs

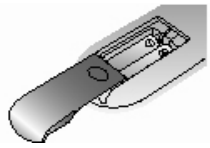
CHAP 1. INTRODUCTION

7. Remote Controller

1. REC (Record)
2. Mute
3. CH1~CH10 (Channel selection)
4. Zoom
5. INFO (Information)
6. Menu
7. Multi
8. PIP
9. Auto
10. ◀Left
11. ▲Up
12. ▶Right
13. ▼ Down
14. ENTER
15. All (Playback search menu)
16. Time (Search by date/time)
17. List (Search by date/time list)
18. ■ Stop
19. REW (REW1, 2 and 3)
20. FF (FF1, 2 and 3)
21. ▶ Play
22. II Pause
23. CD/DVD Backup
24. USB Backup
25. P/T/Z/F Control



1. Open the battery container by sliding down the cover.



2. Insert two batteries according to directions provided.

3. Close the container by sliding up the cover.

CHAP 2. INSTALLATION

1. HDD Installation

1 Unscrew the sides, rear of the DVR and remove the top cover.

2 Fix HDDs to rack mount by screwing as left.

3 Install the HDDs on the HDD plate and screw as left.

> ⚠ **HDD Jumper Setting Information**
> Before install the Hard Disk Drives, please read the jumper setting information on the label. If the jumper is not set properly, the system will be disordered.

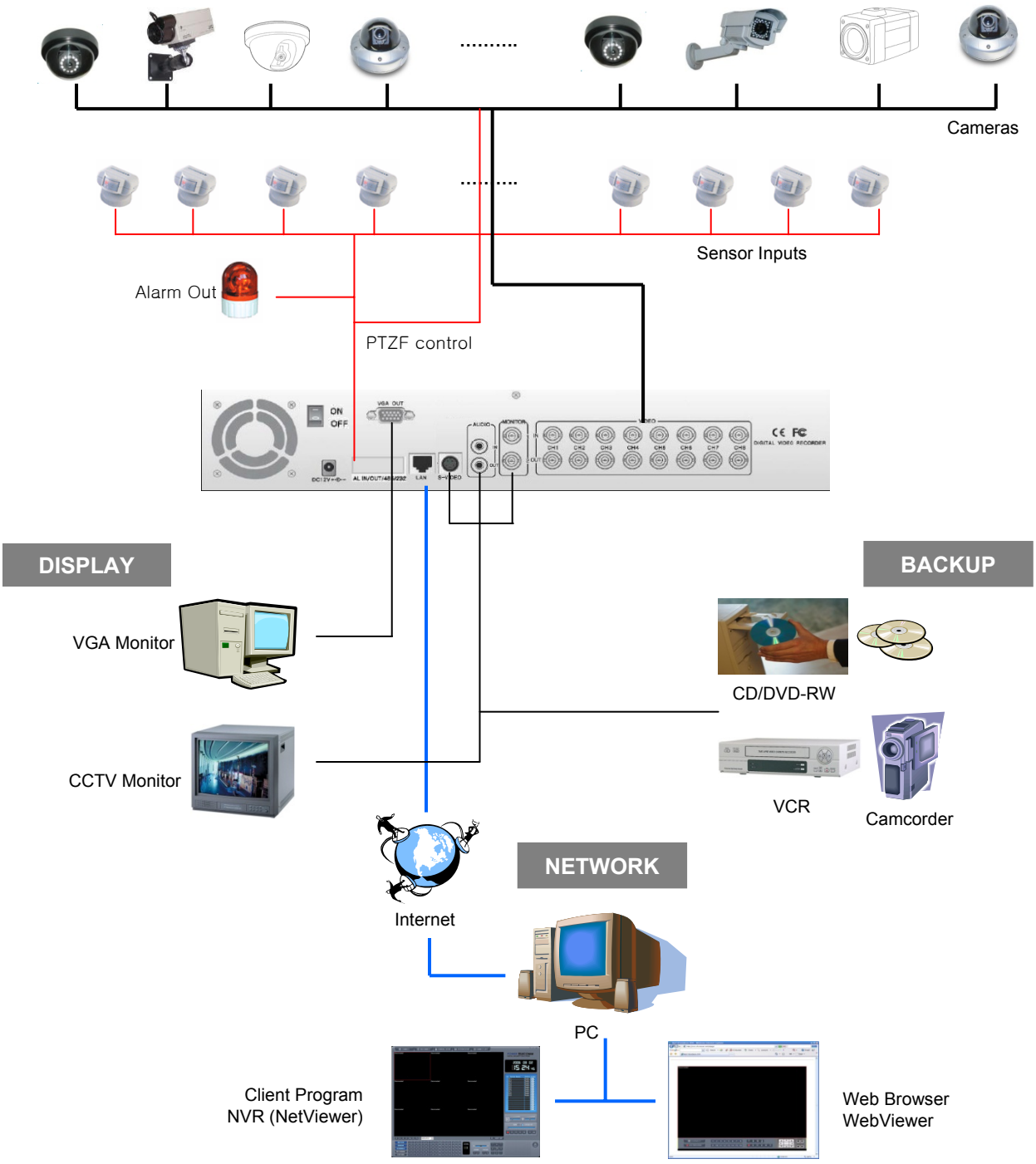
4 Make sure that the HDDs are set to “Master” or “Slave” properly and then connect the power cable and IDE cable.

> ⚠ Check if HDD has no problem after HDD installation because record function may not work well due to HDD problem.
> DVR shows error message when HDD has problems or it doesn’t detect HDD.
> Contact your local distributor and exchange with new one when you find your HDD has a problem.

5 Close the top cover and screw and turn on the power.

CHAP 2. INSTALLATION

2. System Diagram



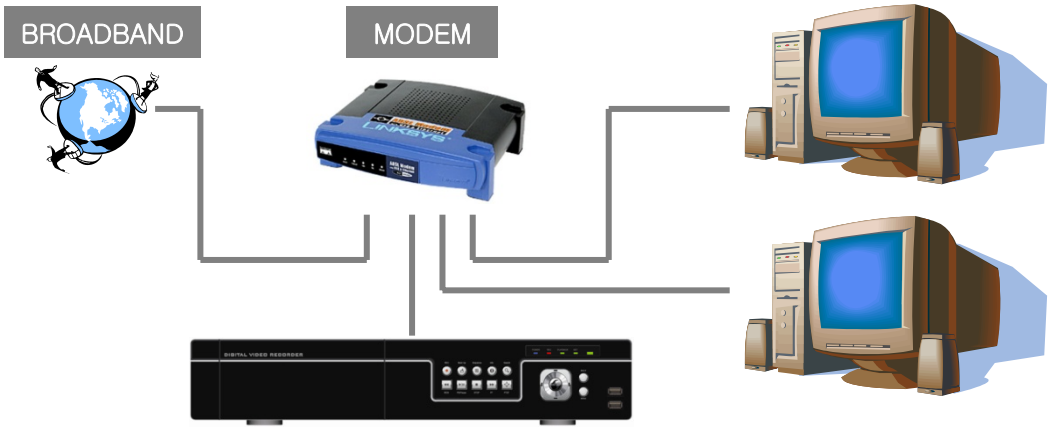
Note You can use general home TV or PC Monitor as well as CCTV monitor.

CHAP 2. INSTALLATION

3. Network Connection

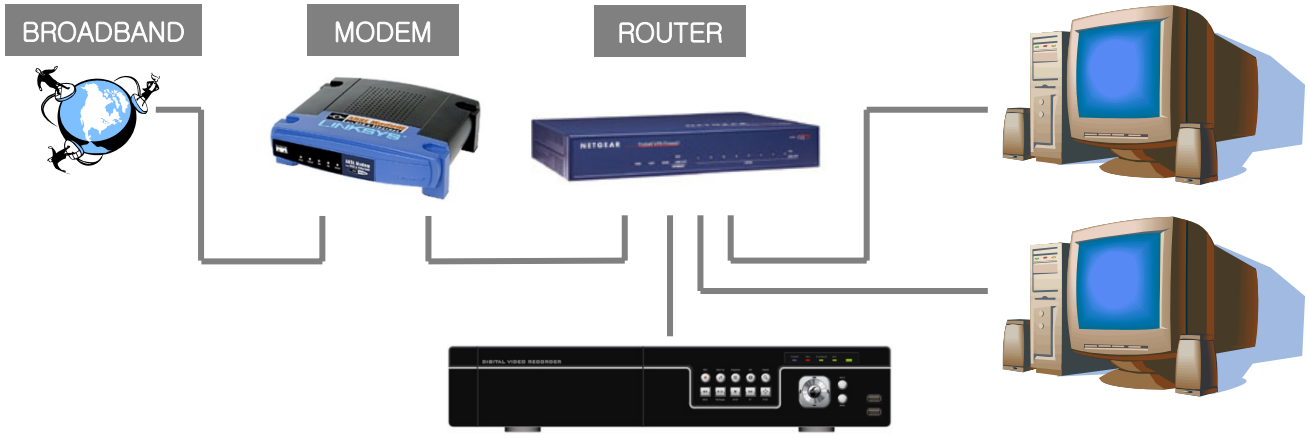
3.1 Using Static (Public) IP Address

You can use one of Static IP addresses, Subnet Mask and Gateway address provided by your ISP (Internet Service Provider) for IP address, Subnet Mask and Gateway address fields in Network Setup menu of your DVR for network connection through Net / Web Viewer. The Gateway address is the IP address of your Modem.



3.2 Using Dynamic IP Address

You can use Router with your Dynamic IP broadband modem. In this case, you should set the configuration of Router properly for network connection between DVR and Net / Web Viewer.
Please follow the instruction in next section to configure your Router correctly.



⚠ If your Broadband Modem does not support internal loop back (port forwarding) function, and if you want to monitor DVR using a PC located in same Intranet, you should use Direct IP instead of DDVRLS in the connection menu of Net Viewer.
If your PC is located out of Intranet, you can use both DDVRLS and Direct IP to connect to DVR even though your Broadband Modem has limited features.
You will know about DDVRLS and Direct IP in **Chapter 5, NVR (NET VIEWER)**.

CHAP 2. INSTALLATION

3.3 Router Configuration

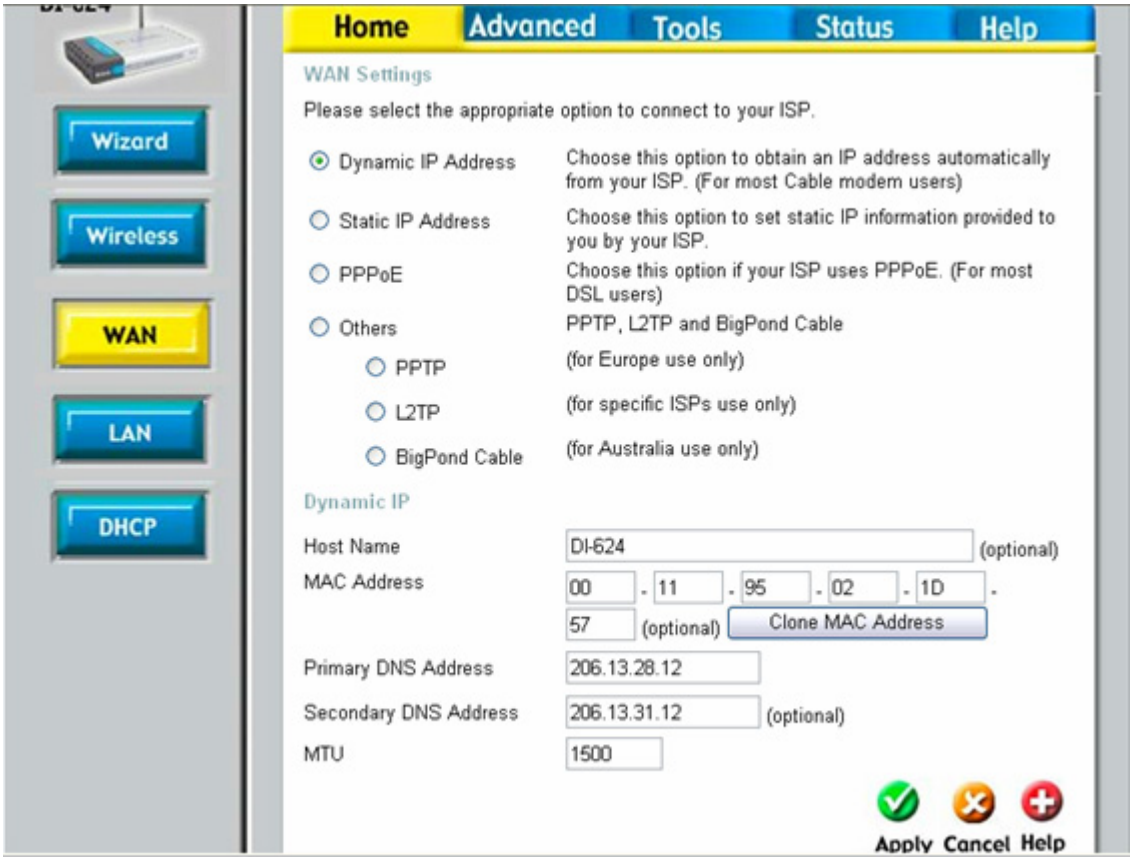
If your DVR is connected to network through Router, you should configure Router properly. There are 3 steps as follows.

1. WAN Setting
2. DHCP Setting
3. Virtual Server Setting

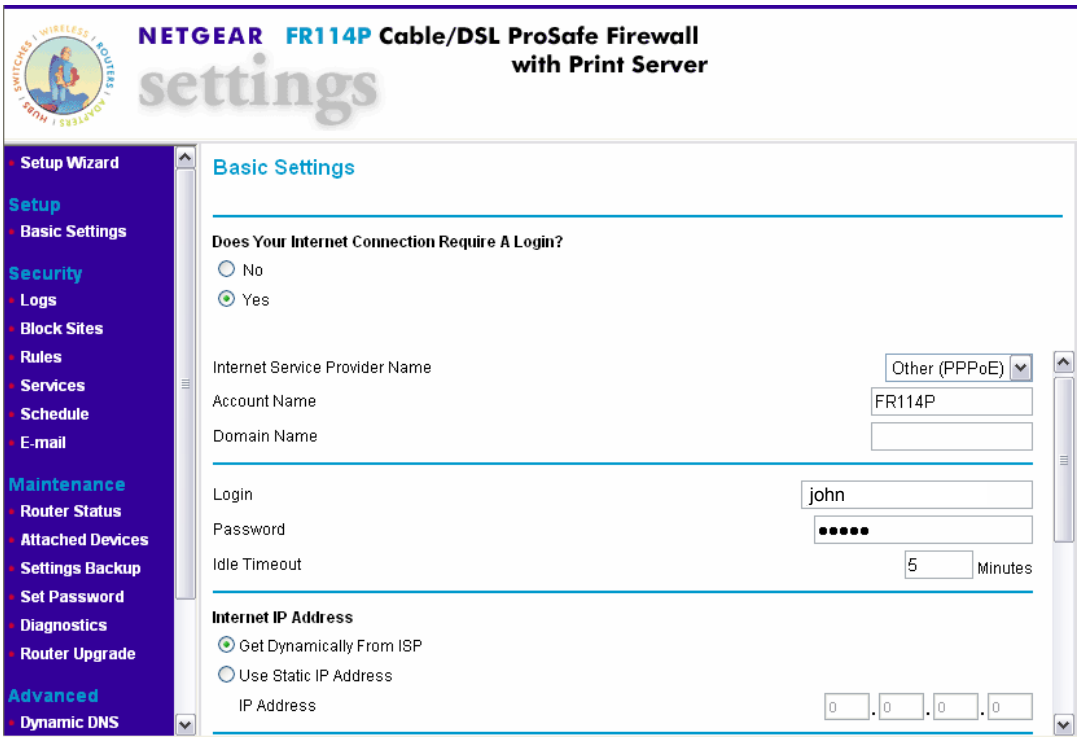
Routers from D-Link, Net Gear and Linksys are quoted as examples in this manual.

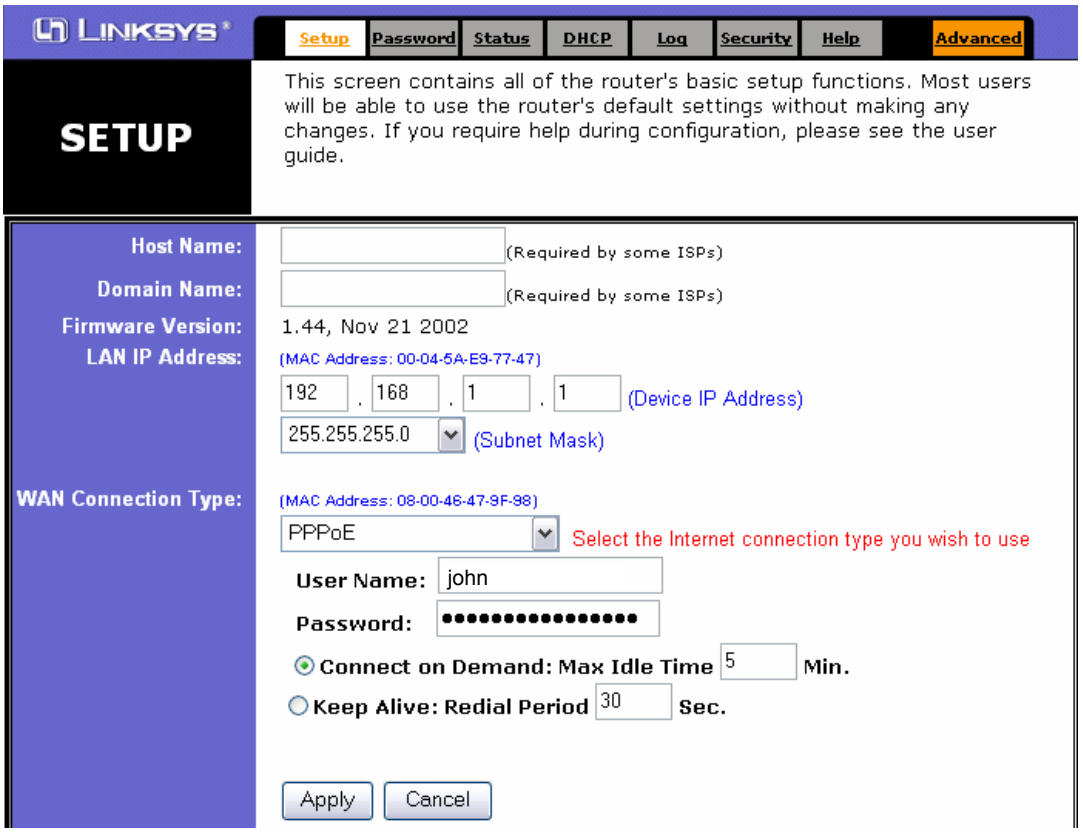
3.3.1 WAN Setting

When you connect to your Router, you can find menu for Wan setting. Please confirm the WAN setting. If you are using DSL service, you should select PPPoE, and you will see sub-menu to type in DSL user name and password.



CHAP 2. INSTALLATION





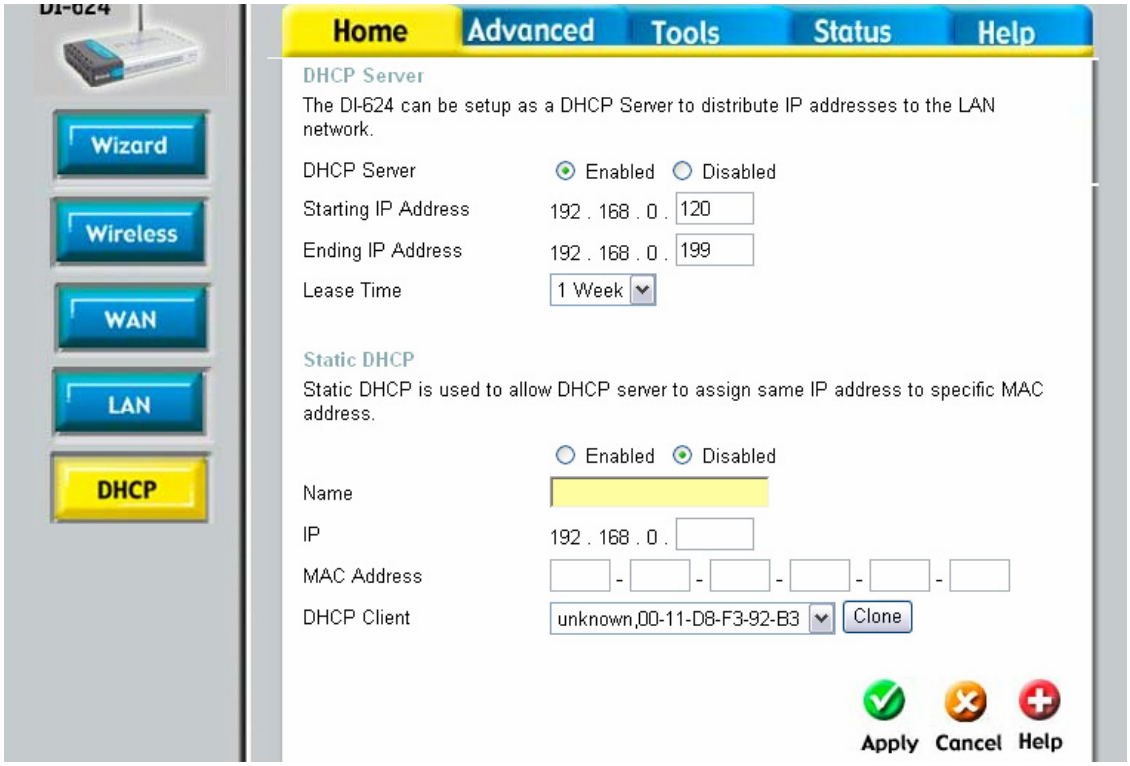
CHAP 2. INSTALLATION

3.3.2 DHCP & IP address Setting

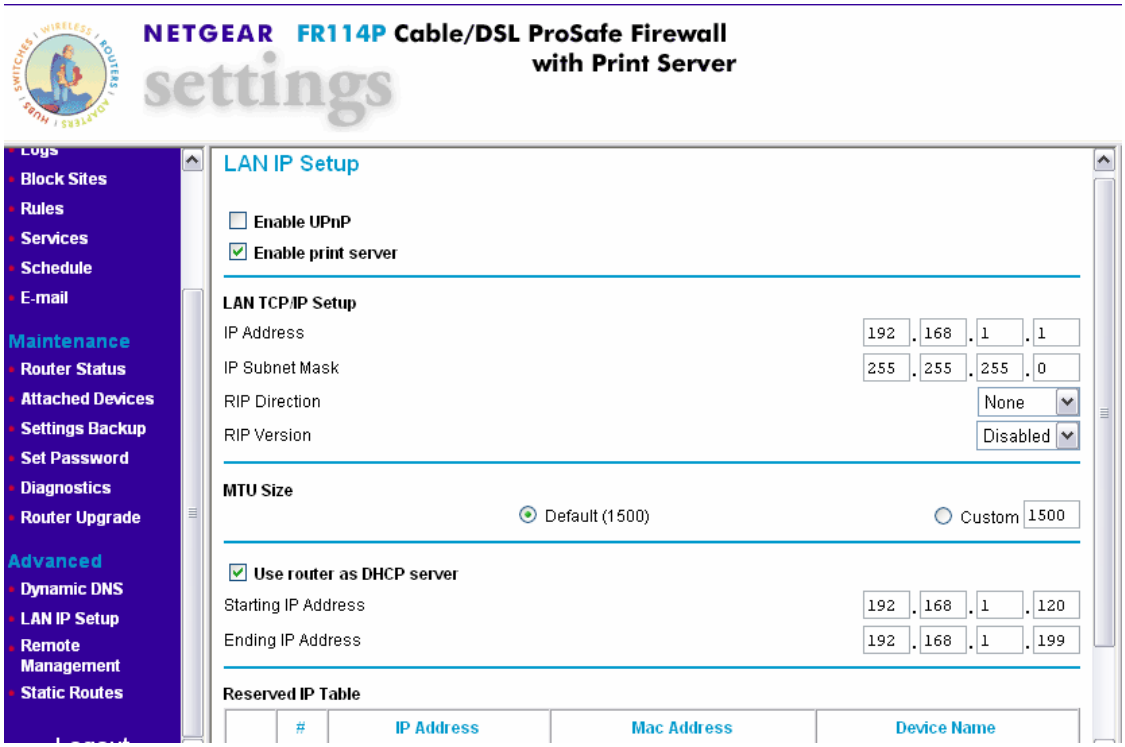
To assign DVR an unique private IP address in your intranet environment automatically, you can enable DHCP option in the Network Setup menu of your DVR and your router. In this case, you can skip this section. But to prevent unexpected change of DVR IP address because of DHCP function of your router when lease time is expired, we recommend to assign DVR IP address manually. Even in this case, you should enable DHCP server of your router for other network equipments like computers in the same network.

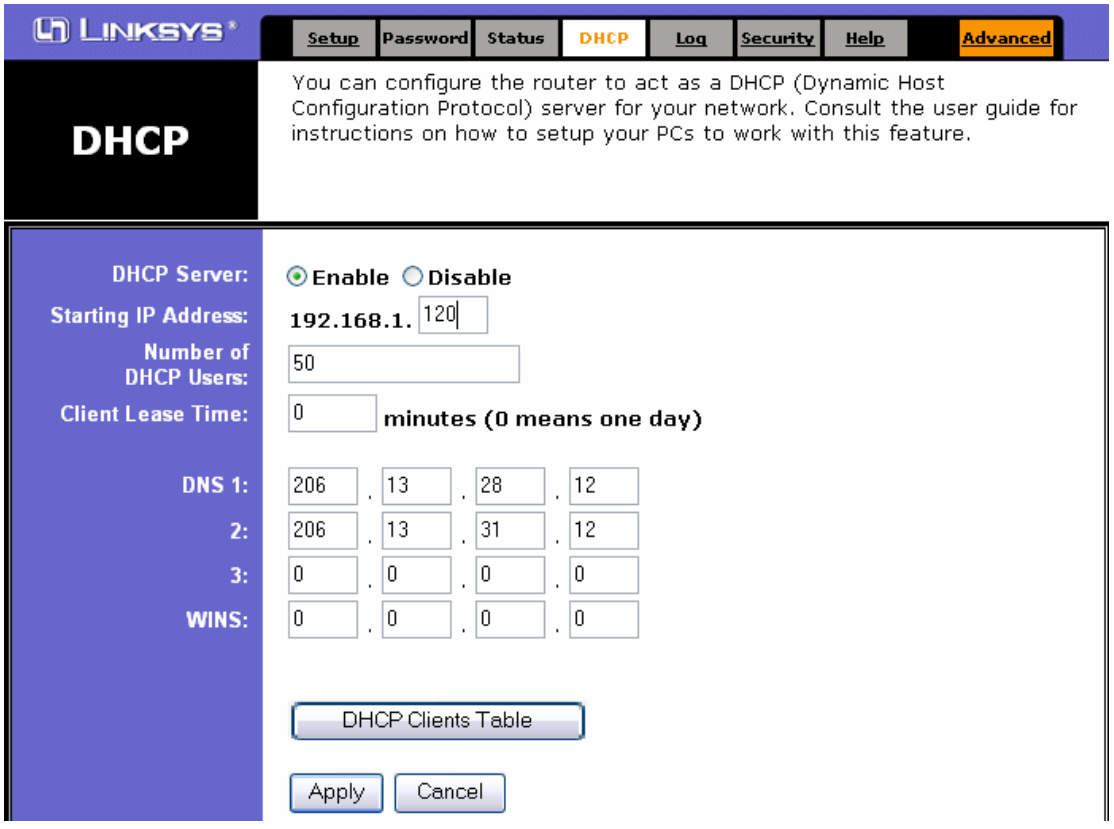
Also if you have any problem with DHCP function or want to assign the private IP address by yourself, please disable DHCP option in the Network Setup menu of your DVR and check the Starting and Ending IP addresses used by DHCP server of the Router.

You can assign any private IP address to your DVR, if it is out of the DHCP range.
But this IP address should be same the IP address in Network Setup menu of your DVR.
See Section 3.4. ccc for right IP address, Subnet Mask and Gateway address for your DVR network configuration.



CHAP 2. INSTALLATION




LINKSYS
Setup Password Status DHCP Log Security Help Advanced
DHCP
You can configure the router to act as a DHCP (Dynamic Host Configuration Protocol) server for your network. Consult the user guide for instructions on how to setup your PCs to work with this feature.
DHCP Server: Enable Disable
Starting IP Address: 192.168.1. 120
Number of DHCP Users: 50
Client Lease Time: 0 minutes (0 means one day)
DNS 1: 206 . 13 . 28 . 12
2: 206 . 13 . 31 . 12
3: 0 . 0 . 0 . 0
WINS: 0 . 0 . 0 . 0
DHCP Clients Table
Apply Cancel

CHAP 2. INSTALLATION

4.3.3 Virtual Server Setting

You should register your DVR as a virtual server into Router. Please type-in the private IP address of DVR into IP address field of Router. (e.g. 192.168.0.110)

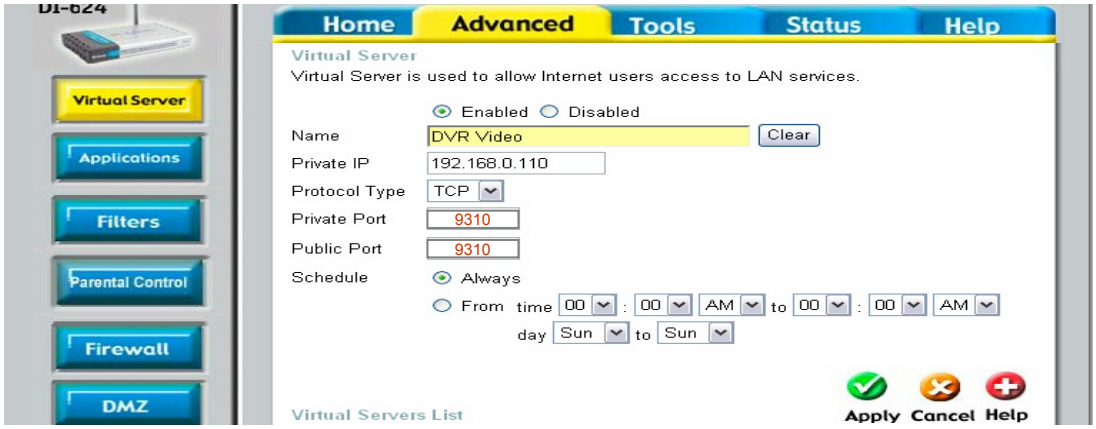
You will see IP address of DVR by pressing Info. button of DVR.

Protocol Type is TCP, and Private/Public Port numbers should be same with the Port numbers assigned in DVR. And you can change Port numbers in Network Setup menu to avoid the conflict with other network servers.

Your DVR uses 2 port numbers and the default Port numbers are 9310 and 80.

9310 is for Control, Video and Audio of NetViewer and 80 is for WebViewer.

You need to register both port numbers into Router as Network servers. And please make sure that your Router dose not block those port numbers to / from the DVR with filter and firewall features.



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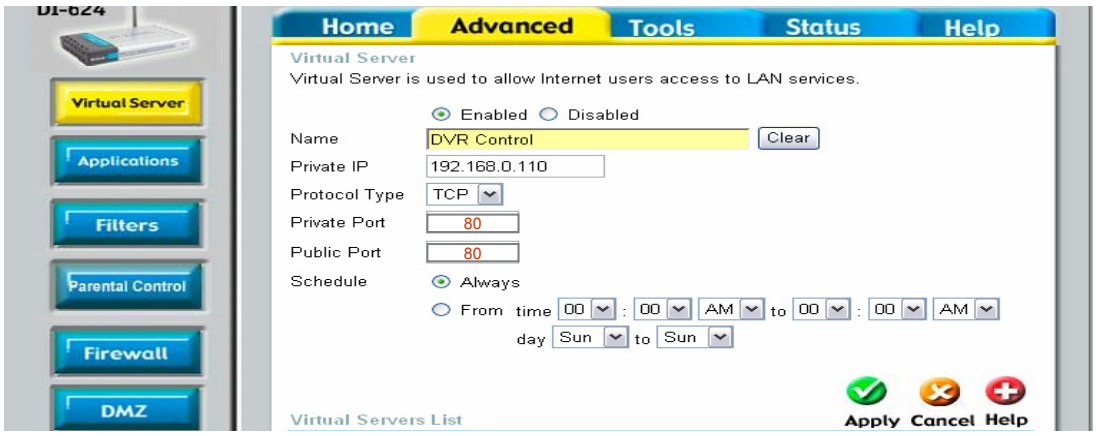
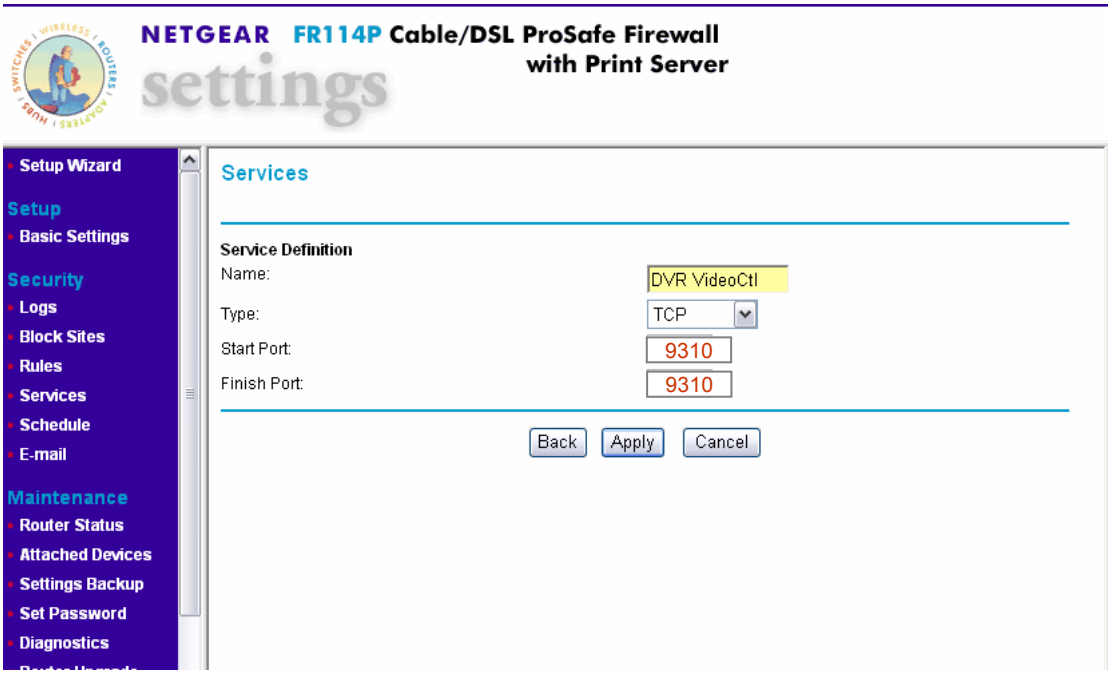
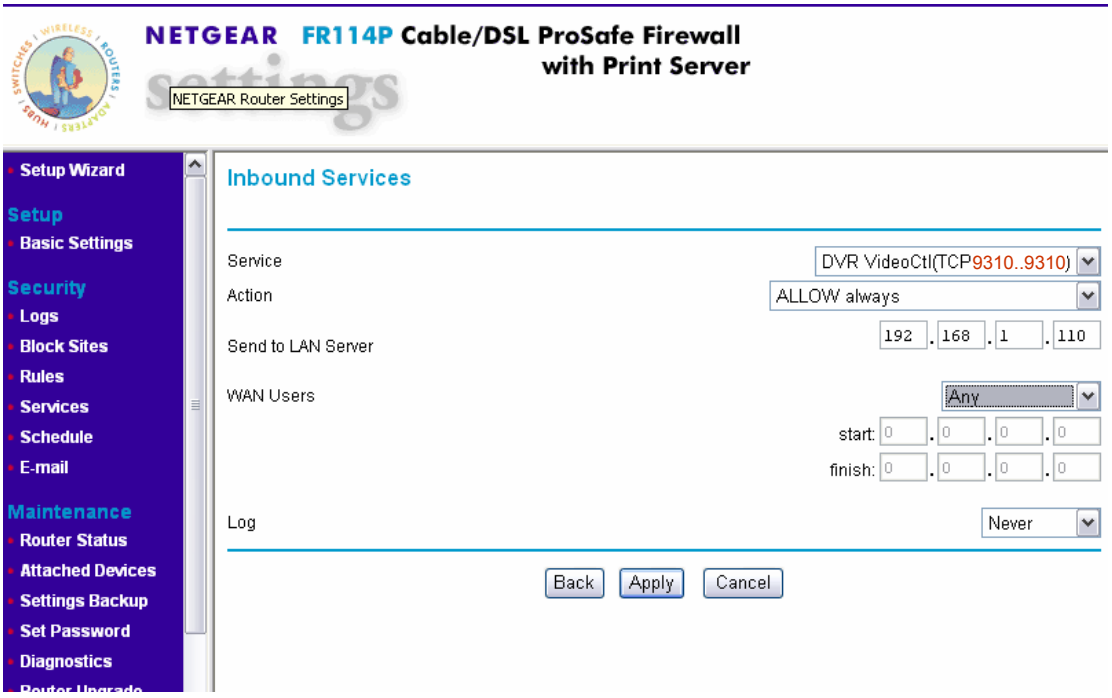
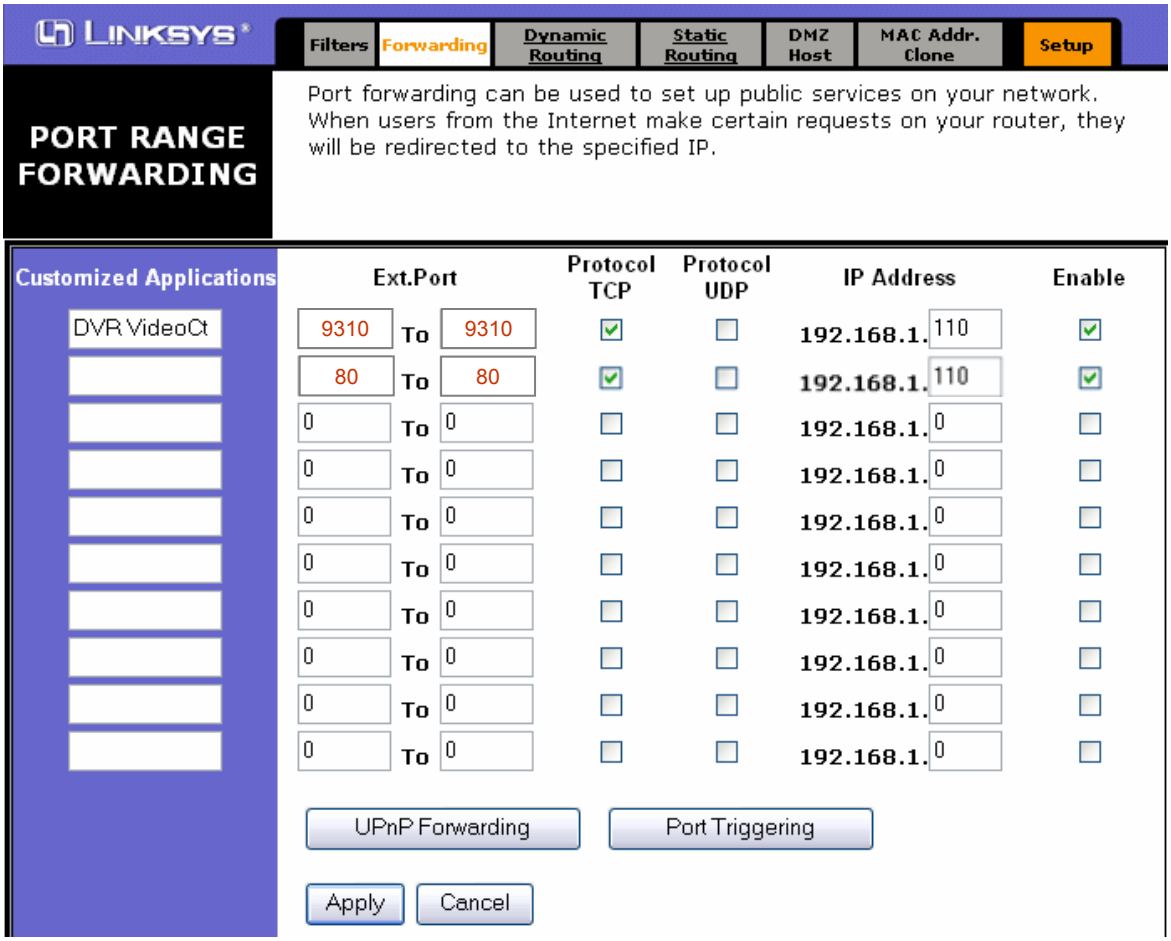


CHAP 2. INSTALLATION





CHAP 2. INSTALLATION



CHAP 3. GENERAL OPRATION

1. Getting Started

First, it is important to make sure that the DVR power is off before connecting all the necessary video, monitor and power cables to the DVR.

You will see the above screen when you power on the DVR system properly.
It shows that the DVR starts.

1. Check if HDD has no problem after HDD installation, because record function may not work well due to HDD problem.
2. Contact your local distributor and exchange with new one when you find your HDD has a problem.

You will see information of IP address of DVR, current available hard drives, CD/DVD burner, USB device as well as firmware version, when you press Info button. To exit to normal display, press Info button again.

CHAP 3. GENERAL OPERATION

2. User Interface

DVR can be operated by using buttons on front panel, remote control unit or USB mouse.
To use USB mouse for general operation, please click right button of mouse. Then you will see buttons on the screen as below. Left button of mouse is for selecting sub menu or setting values.
(If you want a full screen of certain channel on the screen, you can also click left button on certain channel picture. You don't need to pull up sub menu this time. To go back to multi screen again, please click Right button for getting sub menu again.)

For using mouse for DVR, simply click left button. To setup or configure DVR, click left button on Menu icon.
If you are using Remote control unit or Buttons on the front panel, you can not see above button icons. But you can use each buttons directly for your own purpose.

*** Icon vs. Button map**

REC	Backup	Auto Seq.	Info	Multi	P/T/Z/F	Lock	Mute
REW	PB/Pause	Stop	FF	Search	PIP	Zoom	Menu

*** Lock button has tow different functions.**
During Playback, it acts as **Protect File** button. When you click it, you will see new menu window to protect current playback file from overwrite. You can assign 5 files (clips) from each hard drives.
In other operation modes, this button acts as **System Lock** button. When you click it, you will see new menu window to enable system password.

CHAP 3. GENERAL OPERATION

3. Live View

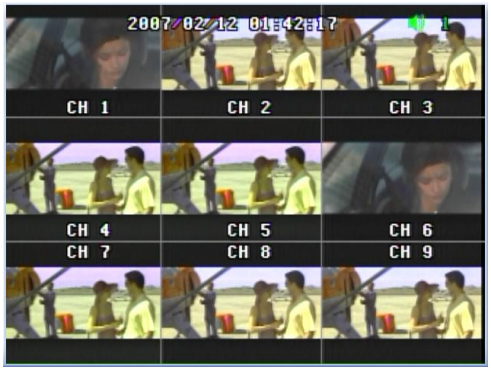
3.1 Multi Channel Display

It displays multiple live channels on the screen by pressing **Multi** button.

You can surf multi channel display by pressing Multi button repeatedly. However, each model supports different multi screens. (see pictures as below)

[16 CH display Mode]

[8 CH display Mode]



[4 CH display Mode]

[1 CH display Mode]

CHAP 3. GENERAL OPERATION

3.2 PIP Display Mode

You can select PIP (Picture In Picture) options by pressing PIP button. PIP mode offers a convenient way for monitoring multiple channels with focusing more attention to a particular channel. It shows a main video channel view and small video channel views (up to 3) on the screen.

You can surf 1 PIP/ 2 PIP/ 3 PIP mode with 4 positions by pressing PIP button repeatedly.

To release this mode, press other function button.

3.3 Auto Display Mode

If you select Auto Display Mode, all channels will be switched automatically among 17 types of display in order of "CH1-CH2-CH3- …- CH15- CH16- multi channels mode". DVR keeps the order until you press other function button. DVR skips any channels in case they have no video with.

You can find that DVR indicates Auto Mode in the upper left corner of the screen in this mode.

To release this mode, press other function button.

CHAP 3. GENERAL OPERATION

3.4 Pan/ Tilt/ Zoom/Focus Camera Control

Controlling an external Pan/ Tilt/ Zoom/Focus camera connected to DVR.

3.4.1 Pan/ Tilt Function

1) At multi channel display mode

1. Press P/ T button first.
2. Select your desired channel by pressing P/T button repeatedly on that channel.
3. Control the camera with the direction buttons (Up/ Down/ Right/ Left).
4. To release this function, press P/T button repeatedly until “P/T” indicator disappears on the screen.

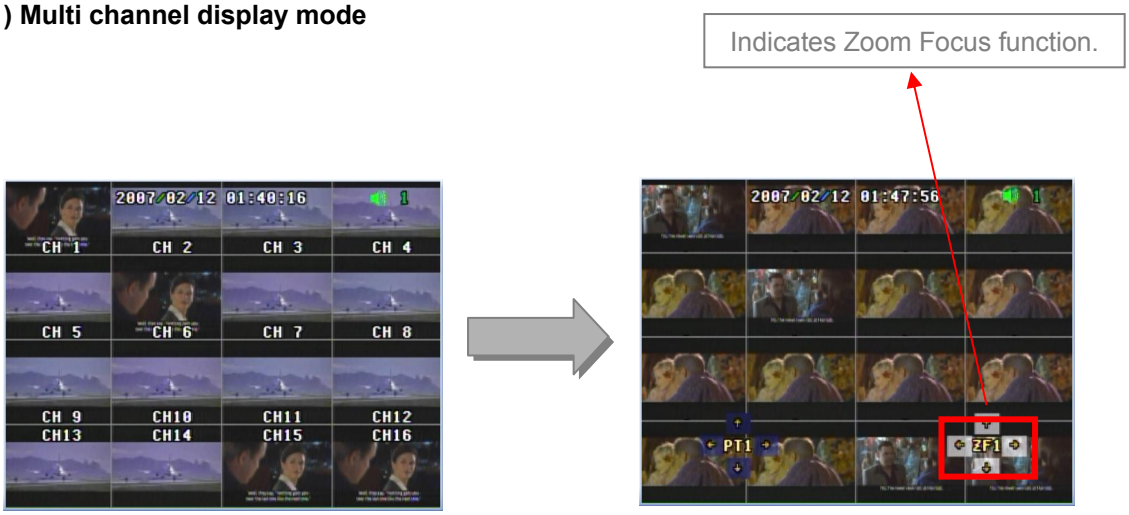
2) At one channel Mode

1. First select your desired channel installed Pan/Tilt camera by pressing channel selection button.
2. When you see a full-size screen, press P/T button.
3. Control the camera with the direction buttons (Up/ Down/ Right/ Left).
4. To release this function, press P/T button again.

CHAP 3. GENERAL OPERATION

3.4.2 Zoom/ Focus Function

1) Multi channel display mode



1. First press Z/ F button.
2. Select your desired channel by pressing Z/F button repeatedly.
3. Control the camera with the direction buttons (Up/ Down/ Right/ Left).
4. To release this function, press Z/F button repeatedly until “Z/F” disappears on the screen.

2) One channel Mode

1. First select your desired channel installed Zoom/Focus camera by pressing channel selection button.
2. And then you will see a the full-size screen.
3. Press Z/F button.
4. Control the camera with the direction buttons (Up/ Down/ Right/ Left).
5. To release this function, press Z/F button again.

CHAP 3. GENERAL OPERATION

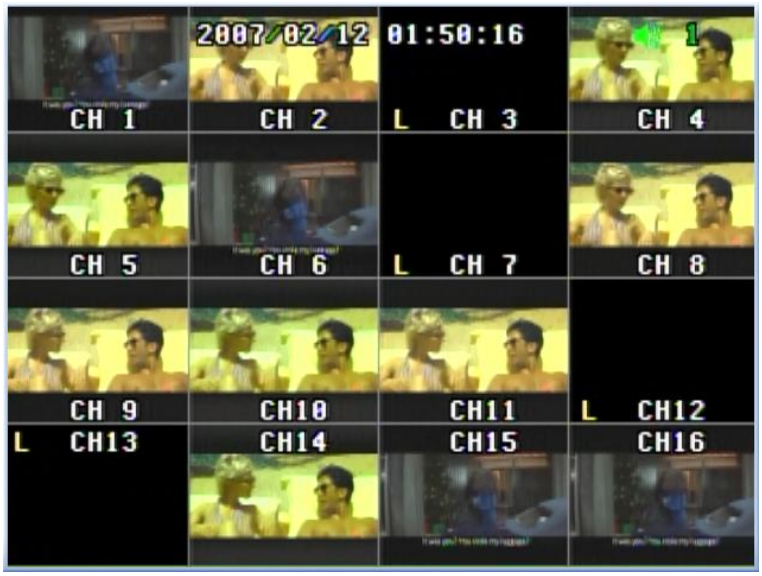
3.5 Digital Zoom Display Mode

You can magnify a certain part of full size screen two times as big in live mode digitally.

1. Select the desired channel among 16 channels.
2. Press Zoom button, then you will see 2x2 enlarged video on the screen.
3. Select the area by pressing Left/Right/Up/Down button to move visual area.
4. To go back to normal display mode, press Zoom button again.

3.6 Video Loss (L)

You will see 'L' indicating video loss on each channel. Please check the video cables and connection of each camera to confirm the signal loss.



CHAP 3. GENERAL OPERATION

4. Recording : (R) (S) (M) (E) (N)

1. If you press REC button for manual recording or DVR starts recording triggered by schedule, motion, sensor and remote client, you will see all different indicator on left-top of the screen. If you see (R), it means the DVR is in the manual recording process.

   To release REC function, press REC button again. Then 'R' will be disappeared and DVR stops recording.

2. This icon (see picture above) indicates audio is being recorded for certain channel as you setup.

3. Also DVR goes into recording mode automatically during **Schedule** Recording (**S**), **Motion** Recording (**M**), **External Sensor** driven Recording (**E**) and **NVR** driven recording (**N**) are activated. And it stops recording when the event is terminated.

CHAP 3. GENERAL OPERATION

5. Playback (P) and Trick Mode (Pause, FF, REW and Frame Advance)

1. If you press PB button, you will see '**P**' on the right-top of the screen and DVR starts to playback. And DVR displays recorded time of current playback in Yellow. The starting PB time is same as the stop time of previous playback mode.

   To release PB mode, press Stop button. Then 'P' will be disappeared and DVR stops Playback.

2. It indicates audio on for certain channel which is being playback.
3. You can get FF, REW and Pause during Playback mode. It supports 4 speeds of FF and REW when you press FF/REW buttons repeatedly.
4. To see pictures in frame by frame, make Pause video first. And press FF or REW in Pause mode. Then you will get next or previous I-Frame video.

To see one channel as full screen display, press channel number buttons. And you can go back to multi channels display mode when you press Multi button. For change the split mode to any desirable Multi channels display mode, keep pressing Multi button repeatedly.

CHAP 3. GENERAL OPERATION

6. Event Search and Playback

Our Pentaplex function allows you enter search mode while DVR is in other operation like recording. No need to stop recording to go back to playback mode.

There are 2 Search modes. The one is Event Search and Date/Time Search, the other.
Press SEARCH button and move to one option listed on right to retrieve video. Then pick the list and press ENTER button. DVR starts to play back the selected list right after.

You can stop the video at any time by pressing “STOP” button. All FF, REW, PAUSE are available during playback.

DVR shows you all events and Date/Time for both Master and Slave on a single screen.

6.1 Event Search

It shows a list of recordings triggered by Manual, Schedule, Motion, Sensors and Network Client. And you will see the nature of record setup under event column.

If you want to see certain list which were generated by specific event, you can use button on right side of the menu besides all list by pressing All.

If you select an event which was recorded by Motion or Sensor triggered and it was All-CH recording option, you will see video from Pre-Alarm recording area. It is 10~30 sec advance from actual event (motion or sensor).

6.2 Date/Time Search

You can designate a specific date and time to retrieve recorded video in between start time and last time. If you input invalid date/time, DVR will display the closest video.

CHAP 3. GENERAL OPERATION

7. CD/DVD/USB Data Backup (AVI or MP4 format)

You can copy Video/Audio stored in DVR(HDD) into CD/DVD or USB memory stick. At Backup mode, all other operations are not interrupted. And during Backup operation, if you select AVI, DVR converts Video/Audio in **AVI file** format automatically for easy replay using any PC. But if you select MP4, your DVR generates **Encrypted Video** backup into CD/DVD or USB memory stick, to authenticate the video file. You can replay this MP4 video only with the Authentic Image Player provided by DVR manufacturer.

1. Insert blank CD/DVD into CD/DVD-burner or insert USB memory stick to USB port.

2. Select CD/DVD backup or USB Backup after pressing backup button.

3. Set the Starting Date/Time for backup.

4. Adjust data size for Backup and click OK button. Then you will see the Ending Date/Time. If you want to change the time slot for backup, re-adjust the backup size and confirm the end time.

5. Select AVI or MP4 for data format. If you need to authenticate video image later, you should select MP4. But if you want easy replay and/or Audio data backup as well as video, you should select AVI.
   To retrieve Backup file in AVI format, you should use Windows Media Player 10. And to retrieve backup image in MP4 format, you should use Authentic Image Player come with your DVR.

6. Press Start button, then DVR copies Video/Audio from hard drive to Backup device in AVI file format. You will see Backup icon on the left-top of the screen until it completes Backup.

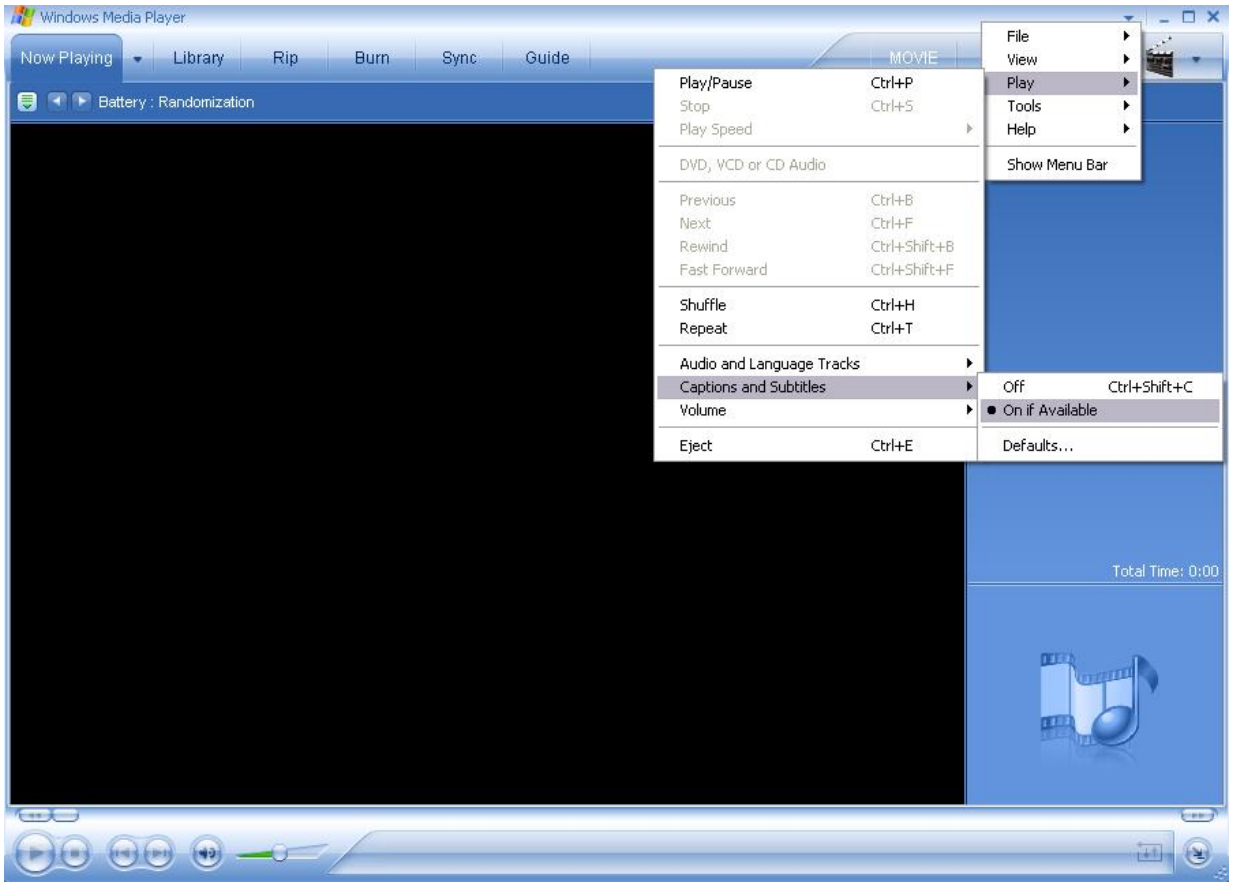
7. If your DVR is doing Recording, Playback and/or Network transmission during backup, it takes longer than just doing backup itself. To check the progress of Backup, click Backup button during Backup mode, it will show you the current progress of Backup.

8. When DVR completes Backup, Backup icon will be disappeared and the CD/DVD comes out from burner automatically. Please leave CD/DVD door open during Backup.

9. You can stop Backup at any time using Stop button.

CHAP 3. GENERAL OPERATION

AVI format player - Windows Media Player 10



If you backup video in AVI format, you should use Windows Media Player 10 to retrieve AVI file.

Here are some directions for viewing AVI file at your PC. If you have any difficulty of playback your AVI file, please follow the directions as below.

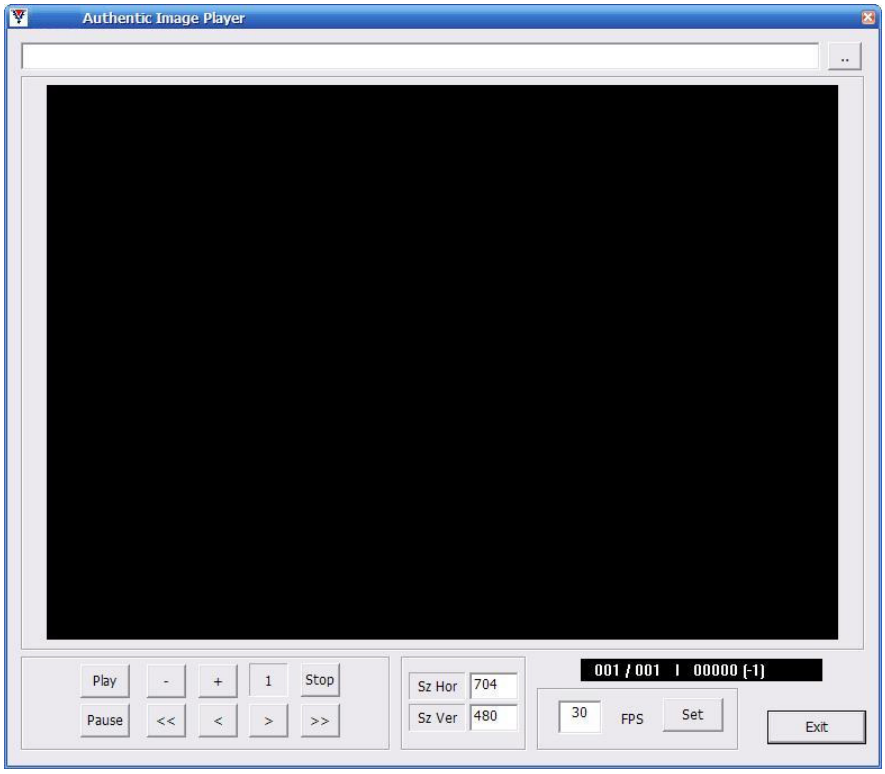
If your PC does not have Windows Media Player 10, you can download it.
Go to http://www.microsoft.com/windows/windowsmedia/player/10/default.aspx

If your Windows Media Player 10 can not display video properly, run xvid.exe file to your PC from Installation CD.

If you can not see the channel and time information during playback with Windows Media Player 10, follow steps below.
1. Click down arrow key (access application menu) on the right top.
2. Go to Play then click ON for captions and subtitles.
3. You'll see the event channel and time while you playback backup video/audio.

CHAP 3. GENERAL OPERATION

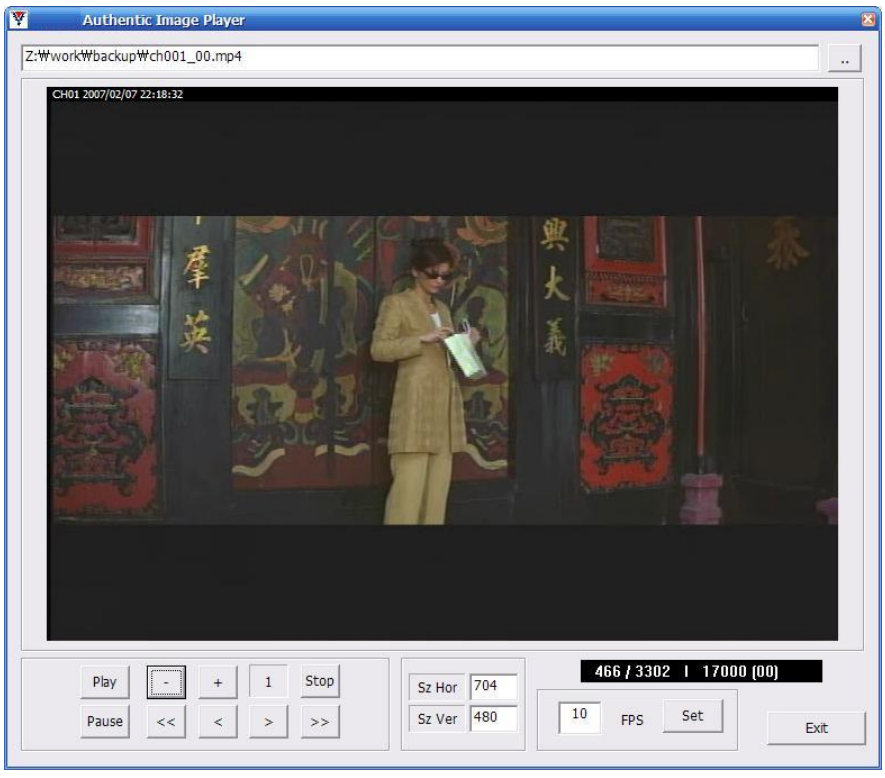
MP4 format player - Authentic Image Player



If you backup video in MP4 format, you should use Authentic Image Player to retrieve MP4 image.

It retrieves only certified images so you can make sure that the image come from your DVR.

If you try to retrieve images recorded by unauthenticated machine, this Image Player does not retrieve images and shows message indicating that the image is not authenticated.



You can choose image file for playback in Search File Directory Field at top of Player.

If the image is certified one, it is displayed at recording speed automatically.

You can adjust playback speed with different frame rate with assigning you own number in FPS field. To apply new speed, click Set button.

You can enforce multiple speed of FF/REW, Frame advance and Pause during playback.

CHAP 3. GENERAL OPERATION

8. Network - Remote Monitoring and Control

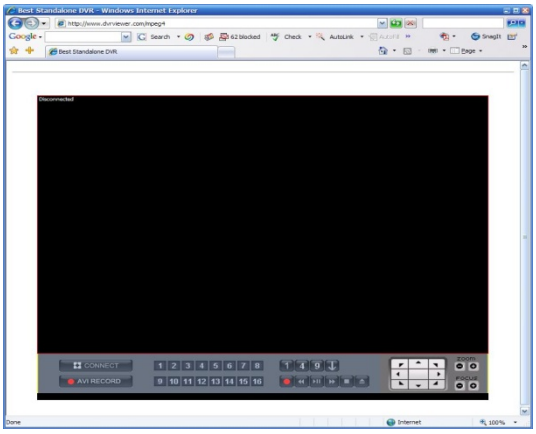
You can monitor and control DVR at anywhere with Net Viewer and/or Web Viewer.
DVR includes Net Viewer, PC Client Software that you can install it into your PC for remote access to DVR.
You can also use web-browser for same purpose.
Net Viewer supports Multi-DVRs and Multi-Clients. Which means you can either manage multiple DVRs using one Net Viewer or multiple users can access same DVR at the same time.

When any client connects to any DVR, you can see the network connection icon displayed on the screen.

For detail operations of Net Viewer and Web Viewer, please see the following Chapters.

[Net Viewer]

[Web Viewer]



CHAP 4. SETUP MENU

Before starting the full operation of DVR system, you have to arrange the desired system configuration using our Setup Menu. Press **MENU button** (or right button of mouse) to access the Setup Menu.

- You can navigate over the 4 options by pressing Left or Right button on the front panel or the arrow keys of the IR remote controller unit.
  If you are using mouse, click Left button to your option.
- To get into a sub menu, press ENTER button where the pointer is located.
- To exit the main menu, press MENU button again.
- If you are in a sub menu, you can always return to superior menu by pressing MENU button.

CHAP 4. SETUP MENU

1. DISPLAY SETUP

• There are 6 sub menus under Display setup (see the picture above). The selected menu is highlighted in blue on the screen.

• To exit to main menu, press **MENU** button again.

CHAP 4. SETUP MENU – Display setup

1.1 CHANNEL NAME and DISPLAY SETUP

1) Name (Default = Channel Name) :
Press the **ENTER** key after moving to the desired channel with arrow button. You can set the name up to 8 digits with letters & numbers as below. Then press **OK** to exit.

2) Blank : ON / OFF
If you do not want to show certain camera on the screen, you can set Blank ON for that camera. But DVR records all record-enabled channels.

CHAP 4. SETUP MENU – Display Setup

1.2 CAMERA INPUT SETUP

This menu allows to set video adjustment options for each cameras. You can adjust with pressing arrow keys.

1) Cameras : CH1 ~ CH16
To select a desired channel/camera to adjust video display.

2) Brightness : 1 ~ 99
To control brightness of video display.

3) Contrast : 1 ~ 99
To control light and shade of video display.

4) Hue : 1 ~ 99
To control color tone of video display.

5) Color : 1 ~ 99
To control saturation of color of video display.

***** To exit this menu, press **OK** button.

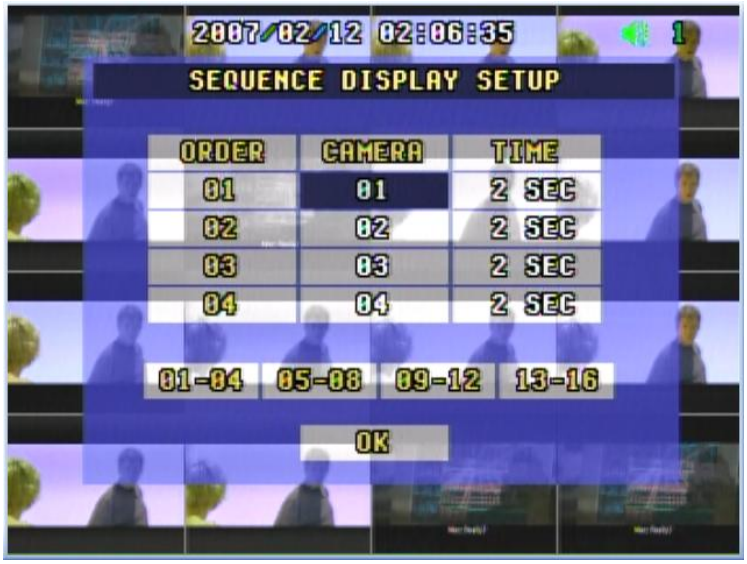
* To return to main menu, press MENU button.

CHAP 4. SETUP MENU – Display Setup

1.3 AUTO SEQUENCE DISPLAY

To select an interval time for Auto Switch between channels.
With the Auto Switch feature, you can select a different range of interval time for each camera.

Range : 1, 2, 3, 5 or 10 sec.



- Select the desired **channel group** from 1 – 4, 5 – 8, 9 – 12 or 13 – 16.

- Select the number of camera into order.

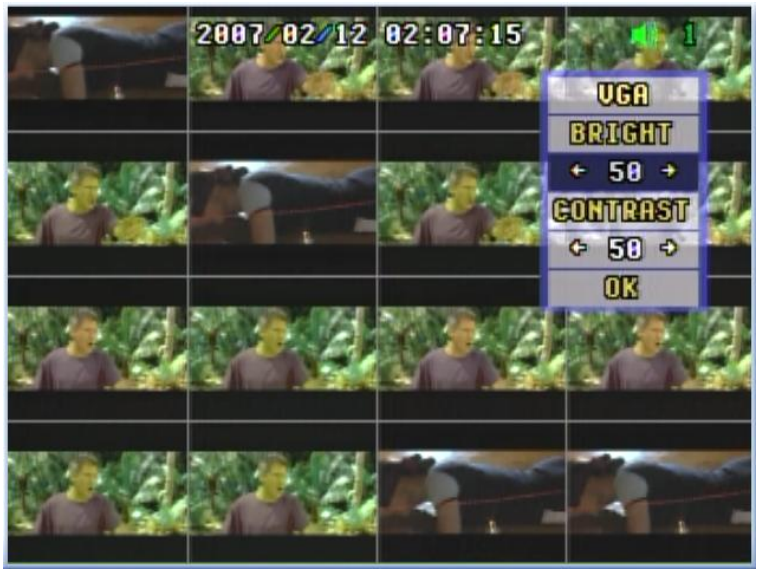
- Set the interval time for each camera.

* To exit this menu, press **OK** button.

CHAP 4. SETUP MENU – Display Setup

1.4 VGA OUTPUT SETUP

This menu allows to adjust configuration for VGA output.



1) Brightness : 1 ~ 99
To control color tone of VGA output.

2) CONTRAST : 1 ~ 99
To control light and shade of VGA output.

* To exit this menu, click **OK** button.

CHAP 4. SETUP MENU – Display Setup

1.5 PIP (Picture In Picture) SETUP

It is a convenient way to monitor multiple channels while focusing more on a specific channel. You can see one main video channel for full screen and (up to) three sub channels on the screen.

MAIN	Select one channel among CAM1 - CAM16.
SUB 1	Select one channel among CAM1 - CAM16.
SUB 2	Select one channel among CAM1 - CAM16.
SUB 3	Select one channel among CAM1 - CAM16.

To define which channel is the main channel for full screen or sub channel among of 16 channels.

* To return to main menu, press **OK** button.

CHAP 4. SETUP MENU – Display Setup

1.6 OSD (On Screen Display) SETUP

You can arrange each setup for on-screen-display.

1) Camera Title : NUMBER / NAME / OFF
You can display all cameras by number, name or blank.

2) Border Color : WHITE / BLACK
All channels display as divided by border color.

3) Date/Time : TOP / BOTTOM / OFF
You can select the place for date/time bar display on the screen.

4) Record Icon : ON / OFF
It will be on the right top of the screen if you set it ON when DVR triggers to record.

5) Network Icon : ON/OFF
It will be on the right top of the screen if you set it ON when DVR connect to network.

6) Playback Icon : ON/OFF
It will be on the right top of the screen if you set it ON when DVR triggers to playback.

7) Skin : BLUE/GREEN/RED
You can choose the color for the back screen of menu.

• To return to main menu, press **OK** button.

CHAP 4. SETUP MENU

2. RECORD SETUP

Here you can set the all recording related options (see the picture as below). Now you're allowed to all individual setup for each cameras. You can also adjust them independently. **If you want to change any record setup while recording, you need to stop recording first.**

CHAP 4. SETUP MENU – Record Setup

2.1 RECORD CHANNEL SETUP (& PRE-ALARM RECORDING)

Here you can set the recording options for each camera. (see picture as below)
DVR supports manual recording, schedule recording, event (video motion and/or external sensor triggered) recording and network driven recording.

To exit recording mode, you can press **REC button** during recording.

2007/02/12 02:10:15
RECORD CHANNEL SETUP
CAMERA MANUAL SCHED MOTION SENSOR
01 ON ON ALL CH OFF
02 ON ON OFF OFF
03 ON ON OFF OFF
04 ON ON OFF OFF
01-04 05-08 09-12 13-16
OK

- m a n d

1) MANUAL (R) : ON / OFF
To enable or disable the manual recording mode when REC button is pressed.
2) SCHEDULE (S) : ON / OFF
To enable or disable the schedule recording mode.
3) MOTION (M): 30SEC ~ 10MIN / ALL CH
To enable or disable recording of each channel which are activated by video motion.
4) SENSOR (E) : 30SEC ~ 10MIN / ALL CH
To enable or disable recording of each channel which are activated by external sensor.

*** If you select ALL CH in MOTION and/or SENSOR, all channels will be recorded in 30 sec. when motion and/or sensor of that camera is triggered.**

* **Check Point**: Please make sure this menu after all setting at Schedule Recording, Motion Recording and Sensor Recording. They should be set **ON** if you want to apply desired settings at certain recordings for real.

PRE-ALARM RECORDING is happened only for event (video motion and/or external sensor triggered) recording with ALL CH option.
The duration of pre-recording is 15~30 seconds prior to the event occurred. It will be helpful to figure out what drives events.

CHAP 4. SETUP MENU – Record Setup

2.2 RECORD QUALITY SETUP

It is for setting the video recording quality parameters for each camera. (see picture as below)

1) SIZE : 720x480(576), 720x240(288) and 360x240(288)
There are three recording modes.

With 720x480(576) mode, DVR records video at full D1resolution.
With 720x240(288) mode, DVR records video at half D1 resolution.
With 360x240(288) mode, DVR records video at CIF resolution.

2) SPEED (F/S) :
You can select a various recording speed in frame/image per second.
Higher F/S requires more HDD spaces. Set lower F/S for more recording time.

Please check **Remaining Available Speed** when you want to increase Size or Speed for certain channel. If there are not enough available speed left, you need to reduce Size or Speed of other channels, first.
16CH model supports maximum 240 FPS (@ 360x240) Recording and Playback total, while 4/8CH models support 120 FPS total.

3) QUALITY : Normal, Good, Very Good, Excellent
Higher video quality normally requires more HDD space.

4) GOP :
It indicates the interval of I-Frame (=base frame of picture) of each channel. Higher number of GOP means more pictures per I-Frame so **lower number** gives you a **better picture quality** and flexible FF, REW and Transmission through the network but consumes **more HDD spaces.**

CHAP 4. SETUP MENU – Record Setup

2.3 SCHEDULE RECORD SETUP

This menu allows to set **Time Schedule** for automatic recording feature. To use schedule recording, you should enable (ON) schedule recording function at Chapter 3.2.1 RECORD CHANNEL SETUP right after. It should be matched with this setup.

1) Camera : CH1 ~ CH16
Select your desired channel for schedule recording.

2) Date : Daily / SUN ~ SAT
Select the desired date for schedule recording.
Daily or Sun, Mon, Tue, Wed, Thu, Fri, Sat.

3) Time :
When you finish to set Date as certain dates, press **ENTER** key to go to Timeline. Surf left or right the timeline by pressing Left or Right arrow. If the cursor is on the right time for select, press **ENTER** key to set it highlighted. Press **ENTER** again to release.

Press **OK** button to exit.

CHAP 4. SETUP MENU – Record Setup

2.4 MOTION RECORD SETUP

This menu enables to set motion areas for motion recording. To use video motion recording, you should enable motion recording function at Chapter 3.2.1 RECORD CHANNEL SETUP right after. It should be matched with this setup.

1) SENSIBILITY : LOW / NORMAL / HIGH / HIGHEST
The higher level is more sensitive to detect motions of each channel.

2) AREA : FULL / SETUP
You can select either FULL or SETUP for area.
To set up the area as you desire, move next to **POSITION** menu.

3) POSITION
To set the area, press ENTER key and surf areas in the desired channel by pressing direction key. Press ENTER key to select or to release.
Once you select the area, you don't need to repeat to setup the area again when you return from other position like OFF or FULL.

CHAP 4. SETUP MENU – Record Setup

2.5 AUDIO RECORD SETUP

1) 4 / 8CH: You can record and retrieve audio signal for **ONE channel** as well as video.

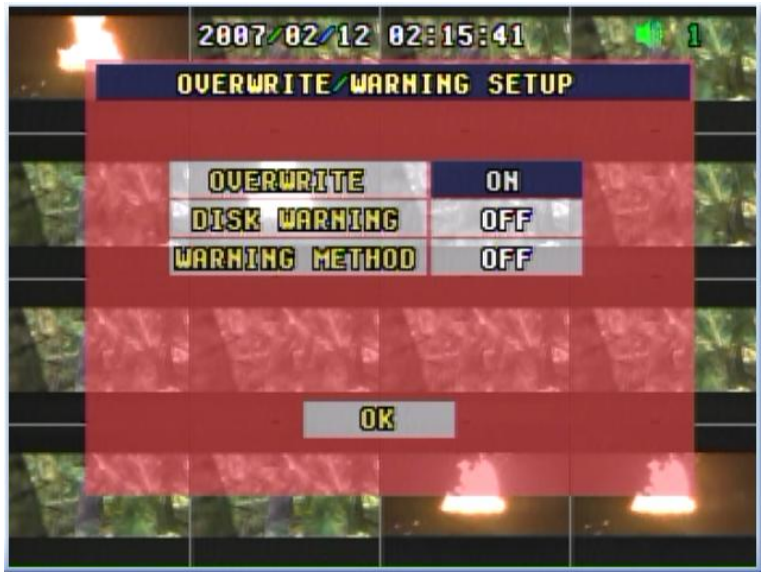
RECORD : ON / OFF
To enable or disable an audio record mode.
CAMERA : CH1 - CH16
Select video channel linked with audio recording.

2) 16CH: You can set **FOUR channels** for audio input as well as record on/off, volume and output channel.

CHAP 4. SETUP MENU – Recording Setup

2.6 OVERWRITE / WARNING SETUP

DVR supports overwrite of HDD and warning of certain extra-ordinary situation.



1) Overwrite : ON / OFF
To enable or disable to overwrite HDD to copy over again.

2) Disc Warning : ON / OFF
To enable or disable display warning message on the screen when HDD is full or defective.

3) Warning Method : OFF / OSD / BEEP+OSD
To select how DVR indicates warning message delivered.

CHAP 4. SETUP MENU

3. DEVICE SETUP

Here you can see and configure the peripherals in your DVR, HDD, CD/DVD burner and USB devices.

3.1 HDD FORMAT / INFORMATION

It shows size and percentage of the used portion of master/slave hard drives which are installed in DVR. Also you can format each hard drives if you want. But you do not need to format hard drive when you install new one. DVR starts to format the new hard drives automatically when you power on DVR. If you format hard drive manually, DVR reboot automatically to complete format procedure.

In case you have some broken video/image during Playback after install new HDDs, it's time to format the hard drive manually using this menu.

CHAP 4. SETUP MENU – Device Setup

3.2 SENSOR SETUP

To select the type of external sensors to be connected to DVR. There are 2 types of sensor (Normal Open and Normal Close) in the market. You should select the type correctly matched with your own sensors to avoid unexpected mal-function.

1) Channel : CH1 - CH16

The Sensor-in terminals of the DVR are used to connect external motion sensors or door/window an any other kind of sensors.

2) Type : N.O. / N.C.

N.O. : There are two types of general sensors in the market. The one is "**N**ormal mode-**O**pen" which means two sensor lines are not connected (=open) in the normal mode besides the lines are to be connected (=close) in the activation mode.

N.C. : The other one is "**N**ormal mode-**C**lose" which means two sensor lines are connected (=close) in the normal mode besides the lines are to be disconnected (=open) in the activation mode.

CHAP 4. SETUP MENU – Device Setup

3.3 ALARM SETUP

DVR supports to use an external alarm device for warning.

1) Alarm Out : ON / OFF

You can enable or disable alarm signal output through external alarm device. It will be activated during Event recording if it us enabled.

2) Buzzer : ON / OFF

Also you can enable or disable internal buzzer when DVR warns through external alarm device.

CHAP 4. SETUP MENU – Device Setup

3.4 PTZF CONTROL SETUP

DVR supports Pan, Tilt, Zoom and Focus control for PTZF cameras or servers. It has RS485 port to connect to PTZF cameras and supports most industrial common protocols.

1) Type :
You can choose any protocol for each cameras from protocols connect with DVR.

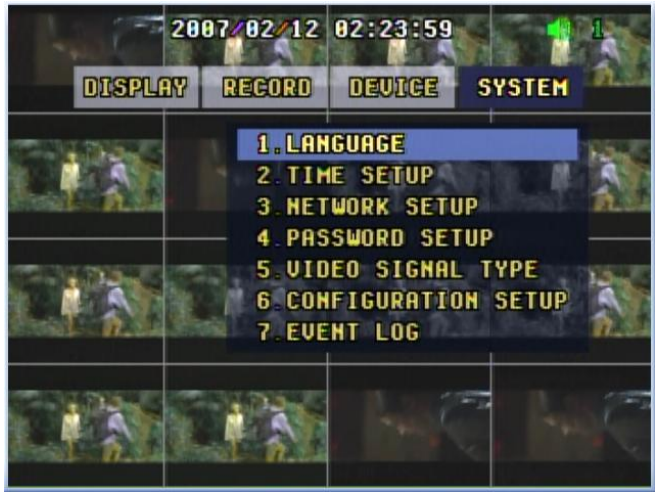
2) ID :
You can assign own ID numbers for PTZF cameras (1~8).

3) Speed : 1 - 5
You can choose the speed of camera movement following to your operation. The high, the faster.

CHAP 4. SETUP MENU

4. SYSTEM SETUP

This menu helps you to configure DVR for basic operation. You can set the current time for your area, network parameters and password for security purpose.



4.1 LANGUAGE

We support English only currently.

CHAP 4. SETUP MENU – System Setup

4.2 DATE/TIME SETUP

DVR allows you to setup the current time manually or automatically. If you want DVR to setup time automatically, you should also configure Network Setup properly. DVR follows time information from time server located in certain area over the internet.

1) Auto Time Set : ON / OFF
To adjust time manually, please set Auto Time Set OFF. Then you can set all details by yourself. If you want to set time automatically, select Auto Time Set ON and time zone. Press **OK** and wait a few seconds till you can see the time set as you desire.

2) Time Zone
Select the correct time zone of your area for DVR. We support all different time zones in the states and most of cities internationally.

3) Date Format (Auto Time OFF mode)
You can set display type of date. MM/DD/YYYY, DD/MM/YYYY or YYYY/MM/DD are available.
Certain models support fixed type of date, YYYY/MM/DD.

4) Date (Auto Time OFF mode)
You can set or adjust current date.

5) Time Format: 12H / 24H
You can select 12 Hours or 24 Hours type for display on the screen. Certain models support only 24H.

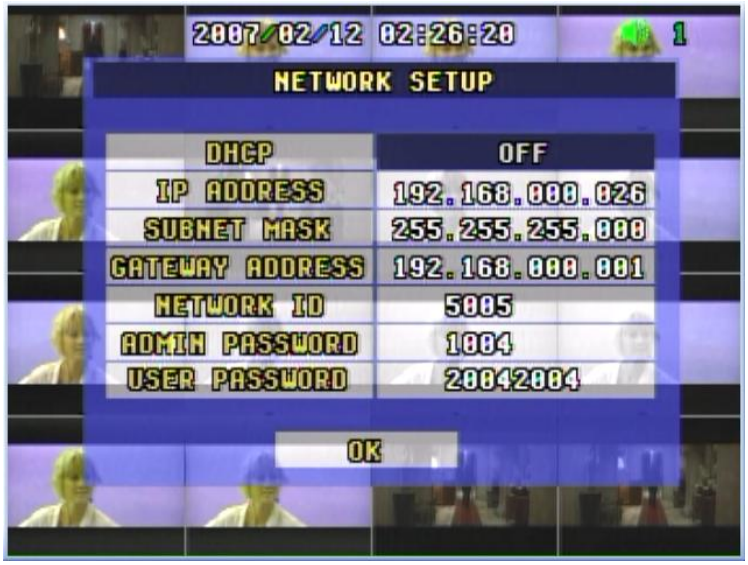
6) H:M:S (Auto Time OFF mode)
You can set or adjust your local time.

CHAP 4. SETUP MENU – System Setup

4.3 NETWORK SETUP

To monitor and control videos and audio remotely, you need to configure DVR correctly here. Before doing network configuration, you should connect Ethernet cable between DVR and your Router, and then configure Router properly.

Basically, there are 24 (4/8CH models) or 34 (16CH models) connections are available connecting to Same DVR at the same time, but more clients make slower transmission due to TCP/IP connection for Preventing any date missed or broken.



1) DHCP : ON/OFF

You can assign DVR IP address by yourself when DHCP OFF or DVR can get available IP from Router when DHCP ON. If your Router changes DVR IP from time to time due to DHCP ON, it is safe to use DHCP OFF to keep correct port forwarding to your DVR IP address.

2) IP Address : 000.000.000.000 (factory default : 192.168.000.008)

Set IP address of your DVR with pressing up and down arrow keys. It should be same one which you input into your Router as DVR IP address for port forwarding. If you use static IP addresses, your ISP provided you available IPs, subnet mask and gateway address. You should input one of available IP from ISP.

3) Subnet Mask : 000.000.000.000 (factory default : 255.255.255.000)

Set Subnet Mask of your DVR with pressing up and down arrow keys in some case. 255.255.255 means that first 3 groups of IP and Gateway address are same, like 192.168.0 in default values. Otherwise, you should get advice from Network administrator to set correct value for Subnet Mask. If you use static IP addresses, you should input subnet mask provided by your ISP.

4) Gateway Address : 000.000.000.000 (factory default : 192.168.000.001)

Set Gateway of your DVR with pressing up and down arrow keys. It should be the LAN address of your Router. If you use static IP address, you should input gateway address provided by your ISP.

5) Network ID : up to 8 letters

Here you must register your network ID first. Press **ENTER** key and set Network ID with ID registration process. The Server will check the availability of your input. If someone uses same ID already, you should choose other available ID to be registered.

CHAP 4. SETUP MENU – System Setup

6) Admin Password : up to 8 letters

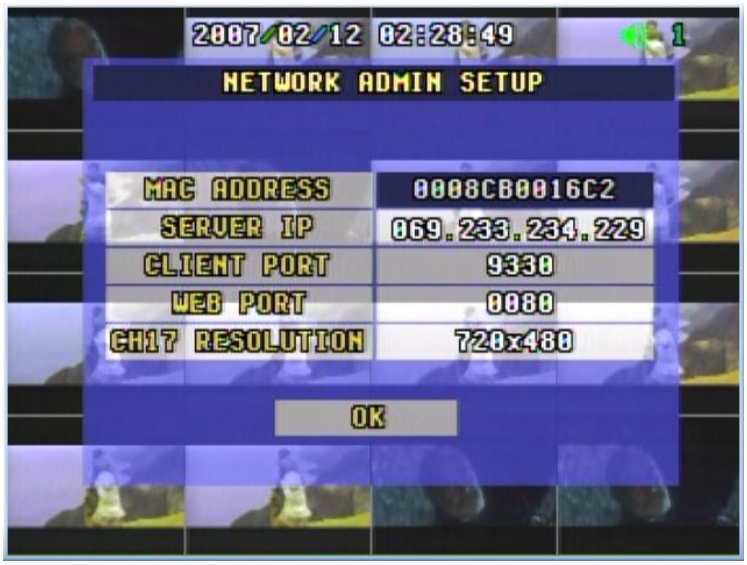
To set your network admin password, click **ENTER** button. With admin password, you can **monitor and control** DVR through network.

7) User Password : up to 8 letters

To set your network user password, click **ENTER** button. DVR grants User limited authority **only to monitor** DVR through network.

1. We'd like to recommend you to check your local Firewall or personal network security programs. Sometimes they block certain ports for network security purpose.
2. If you don't have right information about network configuration, please contact your network administrator.

Note **To check or change Mac. Address, Network Server IP, Port number and CH17/9 resolution of DVR**, press **button #6** at network setup mode.
The main reason of hidden menu (**button #6**) is to prevent accidental changes by any users. It is for professional network administrator so you must not change those information without permission from DVR manufacturer.
If you are using mouse, click right side button on head line of NETWORK SETUP.



CH17 (16CH DVR) / CH9 (8CH DVR) is for Full-Screen-Mode of video transmission during network connection. 4 resolutions (720x480, 720x240, 360x240, 180x120) are available for Full-Screen-Mode transmission to send more video frames over poor network condition.

Full-Screen-Mode sends exactly same video including OSD information which is displayed on your monitor connected to DVR video output.

This function is available with NVR software coming with your DVR, and you can get more information at Chapter 5. NVR.

CHAP 4. SETUP MENU – System Setup

4.4 PASSWORD SETUP

You can set 2 different levels of system password for DVR. **With Admin** P/W, you can access all info of DVR and fully control the system. But **with User** P/W, you only can see the limited info and have no authority to change the system configuration of DVR.

1) Enable : ON / OFF
To enable or disable password function. If you set ON, you need to put your password when you access to DVR.

2) Admin : Set numbers up to 4 digits
To register password of Admin level.

3) User 1 - User 5 : Set numbers up to 4 digits
To register passwords for User level.

CHAP 4. SETUP MENU – System Setup

4.5 VIDEO SIGNAL TYPE : NTSC / PAL

With this menu, you can switch the color video signal format between NTSC and PAL.

4.6 CONFIGURATION SETUP

1) Export Configuration : Export current configuration of your DVR with using USB stick.
2) Import Configuration : Change the current configuration of your DVR with using USB stick.
3) Copy Configuration : Copy sequence time, recording channel/quality/schedule and motion setup from certain channel to all or specific channel
3) Factory Reset : YES/NO
With Factory Reset, you can restore all configuration of DVR to factory default values **except Current Time Info and Network Setup Configuration**.

CHAP 4. SETUP MENU – System Setup

4.7 EVENT LOG

Your DVR stores over 64,000 logs and you can see the details. To see event logs, click EVENT LOG button, then you will see all logs from latest one.

There are 5 groups of logs, Menu Setup change, Network Connection, Event (Motion, External senor driven recording), Power on/off and Record Start/Stop (Manual, Schedule, Network driven recording. To see detail information of each log, click it. Then you will get new window with detail information.
Also, you can remove all logs from list using RESET button at the bottom.

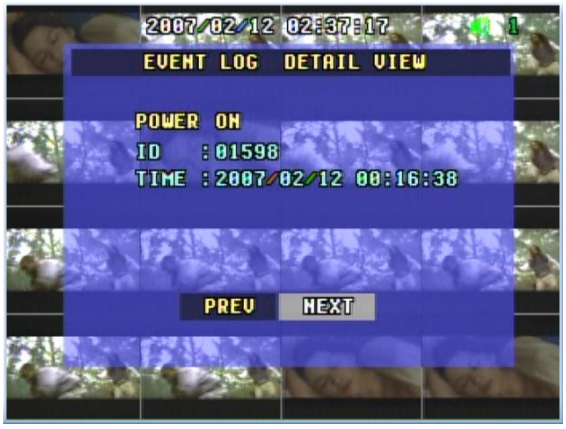
CHAP 4. SETUP MENU – System Setup

Here are examples of detail information of logs of each groups. Also you can sort logs using MNU (Menu Setup change), NET (Network connection) EVT (Motion, External sensor recording), PWR (Power on, off) and REC (Manual, Schedule, Network driven recording) buttons.

[Menu Setup change]

[Network connection]

[Motion, External Sensor recording]



[Power on, off]

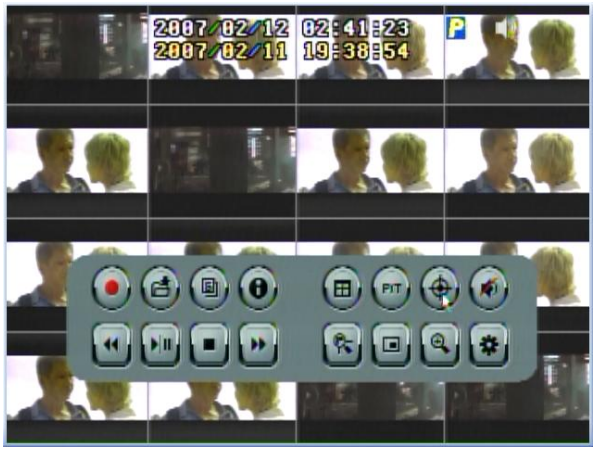
[Manual, Schedule, Network recording]

[Sorting logs]

CHAP 5. PROTECT VIDEO/AUDIO FILE

1. Protect Registration

Your DVR supports HDD-Overwrite function for continuous recording with limited capacity of hard drive. It means that you can use only one or two hard drives for all life time of DVR, but old video/audio data will be erased to stores new data when it starts overwrite. However, sometimes, you need to protect certain video/audio files (clips) from overwrite to show them to others later, even though you keep recording current video/audio.



How to set Protection

During Playback, you can set Protection for current retrieving file using mouse.

When you click right button of mouse, you will see control panel on the screen.
On the screen, click **Lock button** using left button of mouse.

Then you will see **REGISTER PROTECT LIST** window. It will show attributes of current video file (clip).
Click **YES** to protect this video to prevent from HDD overwrite function.

* Lock Button has two functions.
During Playback, it acts as Protect button. In other Operation modes, it acts as System Lock button.

* You can register up to 5 files in PROTECT LIST for each hard drives. So if you install 2 hard drives into DVR, you can protect 10 files from overwrite.

* If you want to register 6th file into Protect List, you should remove one of existing events from the PROTECT LIST.

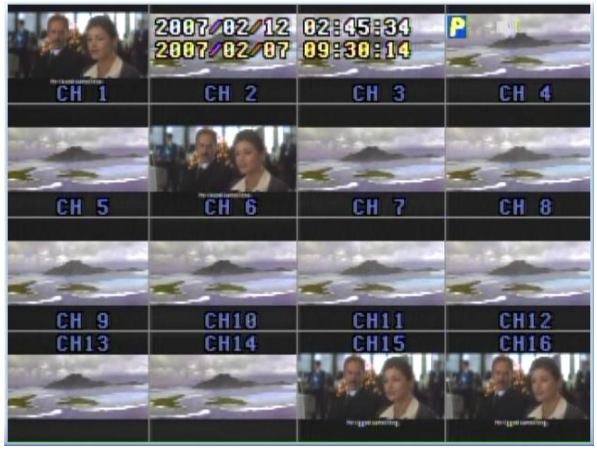
* If you try to Protect certain file which is in PROTECT LIST, you will see 'ALREADY PROTECTED' message at the bottom of screen.

*** You can not Protect current recording file. To protect current recording file, make it stop recording first to close current recording file.**

CHAP 5. PROTECT VIDEO/AUDIO FILE

2. Playback Protected File

Your DVR keeps and manages protected files separately from ordinary recorded files (clips) stored in hard drives. You can retrieve them at any time until you remove them from PROTECT LIST.
For better management of overall DVR operation, each hard drives (Master and Slave) keep protected files up to 5.



How to retrieve Protected files

After when you move video/audio files from ordinary recorded area to protect area, you should enter into PROTECT LIST to search, playback, backup and erase.

Click SEARCH button and select PROTECT LIST. Then you will see PROTECT LIST. And It will show you start time, recording trigger and hard drive which keeps that files.

Select a file and click PLAY button.
Then you can retrieve selected file. To show that it is retrieved from PROTECT LIST, color of channel name will be blue. In ordinary playback the color is yellow.

Other operations like trick play will be same as conventional playback.

CHAP 5. PROTECT VIDEO/AUDIO FILE

3. Remove Protected File

To protect new video/audio files more from overwrite, you should erase old files first, if your current hard drive has already 5 protected files.

How to remove Protected files

If there are 5 protected files in your master (or slave) hard drive and you try to protect new video/audio file during Playback, you will see warning message, “PROTECT LIST FULL ON MASTER (SLAVE) HDD’ on the screen in a couple of seconds.

To erase old file from PROTECT LIST, go to PROTECT LIST menu.

Select file to be removed from Protect Area.

Click REMOVE button at the bottom.

Click YES to remove it permanently.

Be careful !, After when you click YES, it will Be erased from hard drive permanently and you can not recover it.

CHAP 5. PROTECT VIDEO/AUDIO FILE

4. Backup Protected File

Protected files are very important and valuable evidence of accidents or any extra ordinary situations. And you might want to submit them to someone or public organizations.
You can make a copy of protected files into CD/DVD or USB memory sticks same as ordinary backup function of your DVR.

How to Backup Protected files

Go to PROTECT LIST menu.

Select file to make a backup from Protect List.

Click BACKUP button at the bottom.

Select CD or USB for backup media.

You will see Backup menu. Select start time, channels for backup, backup size and click OK button. Then you will see the End time.

If you want some backup condition, you can change parameters. After you change some parameters, click OK button again.

To start backup, click START button.

CHAP 6. NVR (NETWORK VIEWER)

1. Getting Started

1.1 System Requirement

- Pentium III or above recommended
- O/S : Microsoft Windows XP or 2000
- 256MB RAM or above recommended
- Super VGA 16M or above recommended
- 10/100 Base T network card for LAN operation

1.2 Network Environment

	Client PC	DVR
Minimum	More than 128Kbps	More than 128 Kbps
Recommend	More than 3 Mbps	More than 3 Mbps

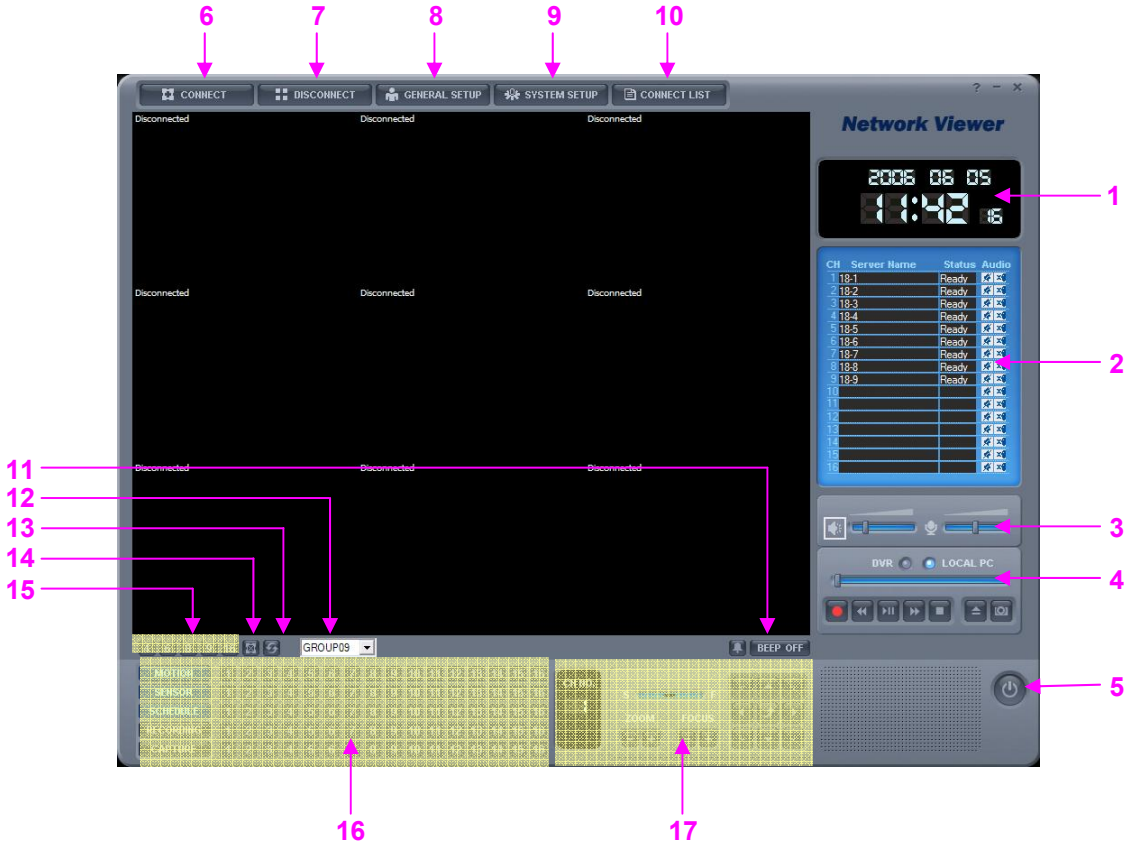
1.3 Network Viewer Installation

To start network viewer installation,

1. Turn on your PC.
2. Insert installation CD into the CD-ROM drive of your PC.
3. Execute Setup. exe, so it installs Net Viewer automatically and generates Icon on the Desk Top screen.
4. Click the Net Viewer Icon, then network viewer will appear on the screen as below.

CHAP 6. NVR (NETWORK VIEWER)

2. Buttons and Functions



1. **Date / Time** : Displays current date and time of client PC.
2. **CH Status** : Displays camera name, connection and audio status.
3. **Volume Control** : 2 volume controls for speaker and microphone.
4. **REC, PB Control** : Control buttons for recording and playback for Remote DVR or Client PC.
5. **Net Viewer Off** : Button for closing Net Viewer.
6. **Connect** : For connecting to cameras registered on current channel group.
7. **Disconnect** : For terminating the connection to cameras registered on current channel group.
8. **General Setup** :Button for control **DVR** remotely.
9. **System Setup** : Button for control client **PC**.
10. **Connect List** : Menu button for configuration of connection for DVRs and Cameras.
11. **Beeper Control** : To disable beeper in Client PC.

CHAP 6. NVR (NETWORK VIEWER)

12. **Camera Group Selection** : To navigate groups of cameras.
13. **Sequence Display** : Displays each channels in sequence.
14. **Full Screen Mode** : Displays videos on full monitor screen. **To return to Net Viewer, press Esc or right mouse button.**
15. **Multi Screen Display** : Displays in 4, 6, 8, 9 or 16 split modes.
16. **Recording Status in Client PC** : Displays current recording status of each cameras. And shows current channels of Motion (**M**), Sensor (**E**), **S**chedule and Manual (**R**) recording.
17. **PTZF Control** : PTZF control for cameras.

Note

You should setup network configuration while installation of DVR before using Net Viewer.

1. You should register your own network ID, Password for Dynamic IP Support to DVR first. It is required only once for the first connection during installation of DVR and Network Setup. If you use more than one DVR through intranet, you should set Different Port numbers to each DVRs.
2. ID and Password are composed up to 8 letters. **You should get your own unique ID through authentication process. Then you can type in your own Password.**
3. **You should use same ID and Password at Net Viewer.**
4. If you want to use static IP address for DVR, please type DVR IP address into IP address field.

Note

Your DVR Supports both Each-Camera-Mode and Full-Screen-Mode during network transmission. (4CH DVR supports only Each-Camera-Mode)

1. Each-Camera-Mode.

When DVR transmits videos to client PC, it sends each channels independently. In other words, if you register Servers (Cameras) under Folder (DVR) so each cameras sends their video separately.
For example, if you register 8 Cameras (CH1-CH8), 8 cameras sends each videos based on their recording conditions which are set in DVR recording setup menu. The benefit of Each-Camera-Mode is that you can handle each channel separately. But it requires high network bandwidth.

2. Full-Screen-Mode

If you register CH9/17 as a Server (Camera) under a certain Folder (DVR), DVR transmits full screen which is displayed on the monitor to Client PC through CH9/17. You can enable only CH9/17 (instead of enabling all CH1~8 of 8CH, or all CH1~16 in 16CH DVR) to see all cameras. It is good to get more frames for certain channel through network when the internet traffic is heavy.

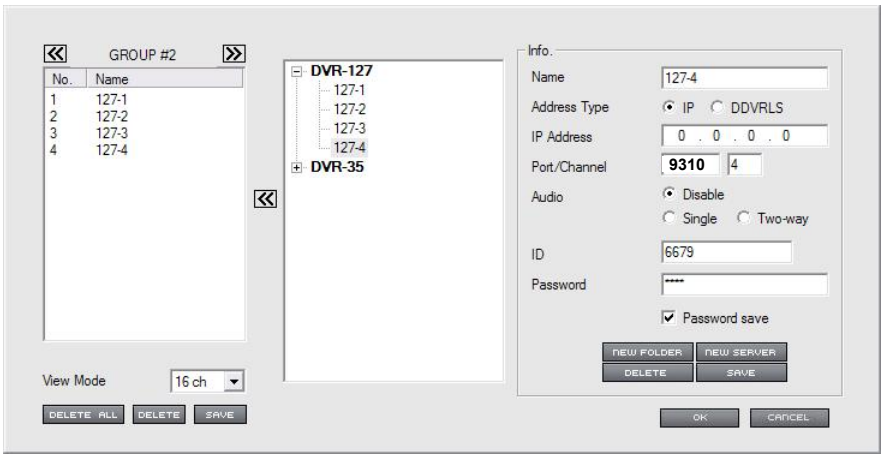
CHAP 6. NVR (NETWORK VIEWER)

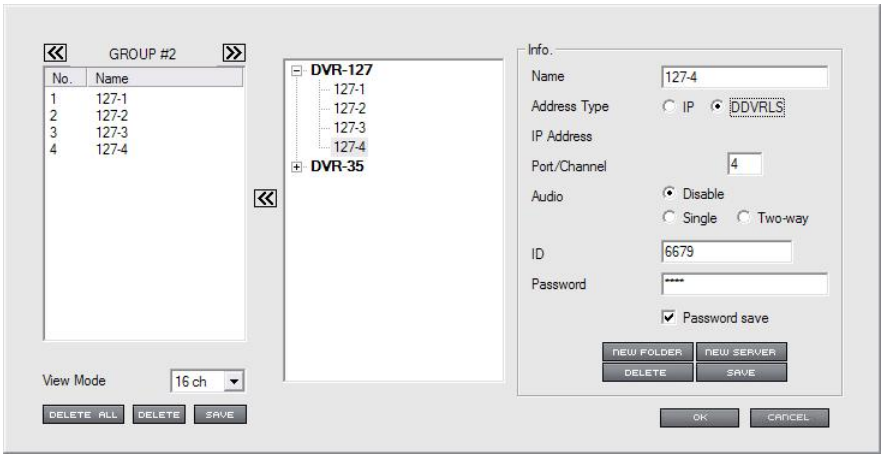
3. Registration of DVRs and Cameras

For connect to DVRs at our Net Viewer, you should register any cameras as a working **Group** which can be displayed on the screen together. Net Viewer displays one group at a time but you can generate it up-to 32 Groups. Each group can have multiple cameras up-to 16 from multiple DVRs. So with one Net Viewer, you can register **maximum 512 cameras (32 groups X 16 cameras).**

First of all, click

button at Right-Top for connection to DVR, you will see pop-up window as below. Follow the step 1 to 3.





CHAP 6. NVR (NETWORK VIEWER)

3. Registration of DVRs and Cameras

Step 1. ADD DVR (for register DVR)

You can see new DVR folder open in the middle column. Create the name of DVR as you can recognize it easily. Since open this DVR folder, you can register cameras as you need up to 16.

Step 2. ADD CHANNEL (for register Cameras/Channels)

- **Name**: Create the name of Camera on the first line.
- **Add. Type**: For using **IP add**., you need to type IP add., ID, P/W and channel numbers.
  (Ex. 4CH DVR, type each channel numbers 4 time separately.)
  For using **DDVRLS**, type ID and P/W only.

Click **SAVE** button after ADD CHANNEL so you'll not loose any data you saved already.
Please see NOTE in previous page(p.67) regarding CH9/17 for 8/16CH DVR.
It is very helpful to see with more frames when your network condition is poor/slow.

Step 3. Making GROUP (with Cameras/Channels)

Select Camera/Channel and click **Double Arrow (<<)** button.
When you see that same selected channel under desired group# in left column, please click **SAVE** button on the bottom for saving.
You can combine any cameras from same or different DVRs into a certain Group.
You can generate maximum 32 Groups.

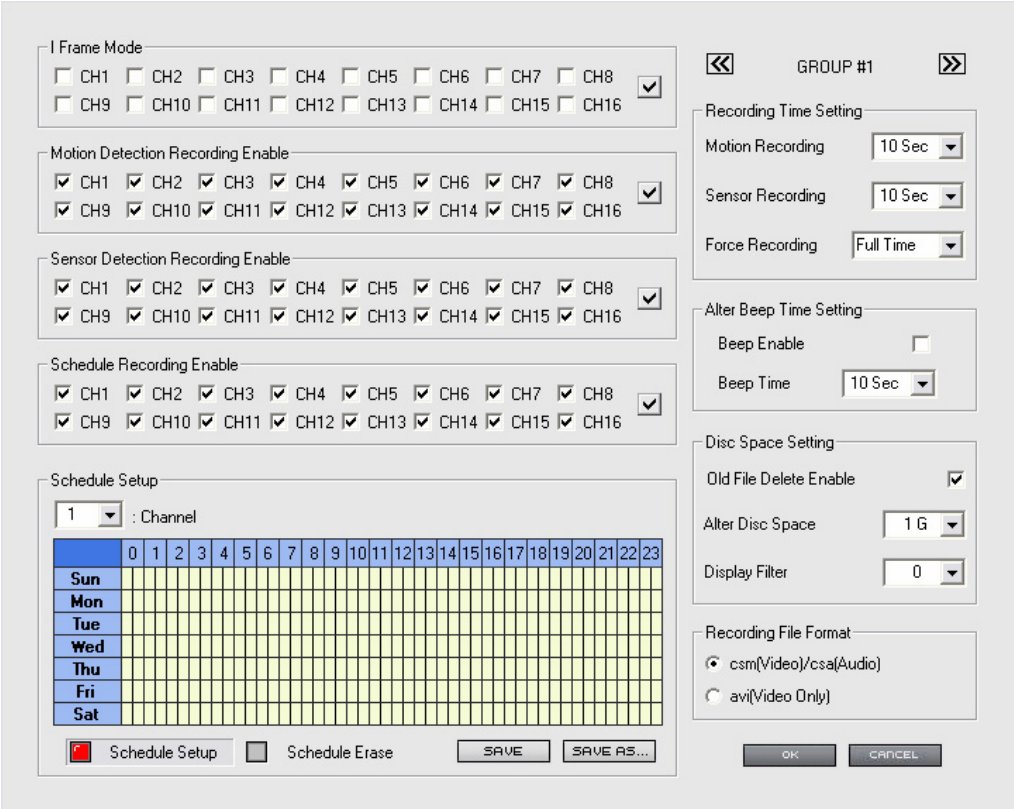
Click OK button for exit.

CHAP 6. NVR (NETWORK VIEWER)

4. NVR (NetViewer) System Setup

At NetViewer, you can set all configuration regarding Camera Display, Recording at Client PC, Warning Method or Recording File Format in each group.

At SYSTEM SETUP, you can configure all **recording setup for Client PC** at pop-up window as below. (This setup will apply when you choose LOCAL PC for Net Viewer operation.)



-**I-Frame Mode :** Click for enable receiving/displaying **only I Frame (No P Frame) of pictures** for network speed and PC CPU power. (If you're not satisfied with picture quality through network, it'd be helpful.)

- Motion Detection Recording Enable : Set channels for motion driven recording remotely.

- Sensor Detection Recording Enable : Set channels for sensor driven recording remotely.

- Schedule Recording Enable : Enable channels for schedule recording remotely.

- **Schedule Setup :** Set schedule for recording remotely. Choose the channel first then click **Box** for Setup. Point starting time and drag to ending time. For erase schedule, click **Box** for Clear. After setup, click **SAVE** button. You can use **SAVE AS button for same Setup/Clear** of different channels easily. Click SAVE AS, then choose each channel or all channels.

- **Recording time Setup :** Set the duration of each event recordings. (Force recording = Manual recording. You can set the duration for manual recording at your PC.)

- Alter Beep Time Setup : Enable/Disable or set the duration of beep sound.

- **Disc Space Setup :** Enable/Disable to auto deletion of old files (overwrite) when disc is full. And set the size of disc space needed to saved for PC system.

- **Recording File Format :** MPEG4 Format/AVI Format. Choosing file format for local recording.

*** At every setup, please click **SAVE** button not to lose information which you input.

CHAP 6. NVR (NETWORK VIEWER)

5. DVR Setup

DVR can be controlled and configured with this function remotely. But we strongly recommend not to use this function in normal operation. If you change the configuration of DVR with undesirable value there, DVR will not work properly. This is only for professional administrator to manage its remote site. **Admin password** is required for this function.

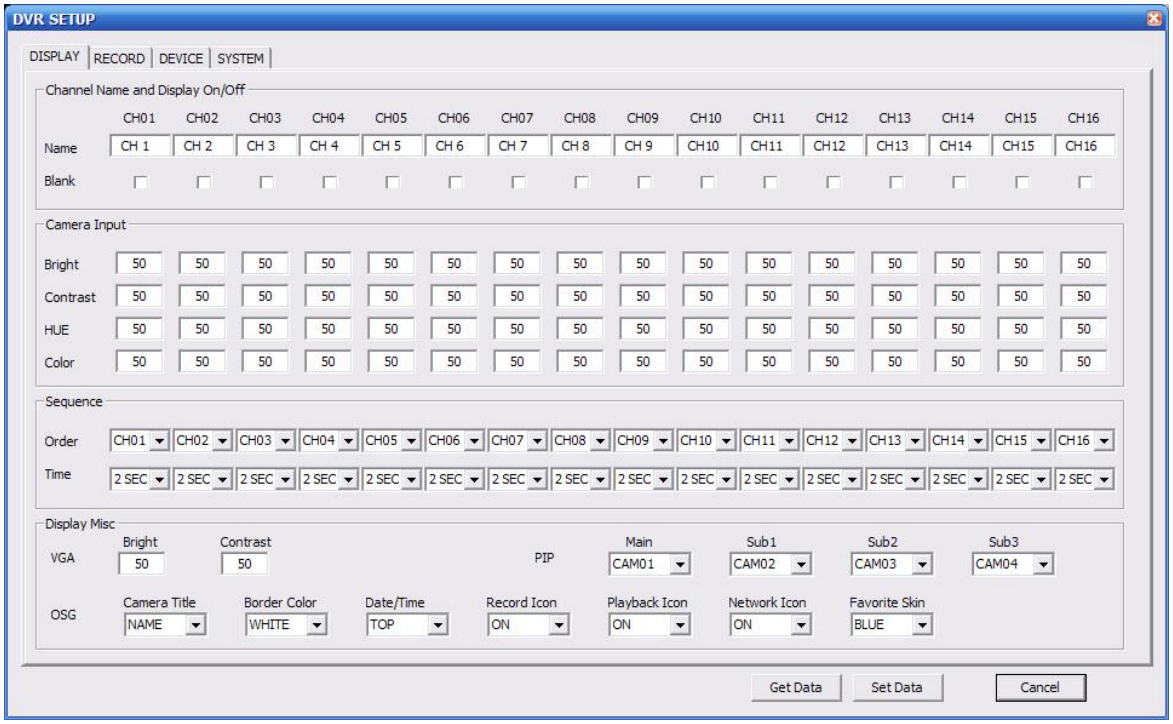
To configure DVRs at Net Viewer remotely, please click

then you will see control menu windows as below. This function is available only when Net Viewer is Connected to DVR already.
After connect to DVR, please select a channel on the screen, then the DVR which has that camera can be selected. You can be noticed the selected channel with border line of that window in red or you can see the channel number at Center-Bottom of Net Viewer.

When you click GENERAL SETUP button, NetViewer get all parameters from DVR and shows them on the pop-up window. And there are 4 taps (buttons) same as DVR main menu.

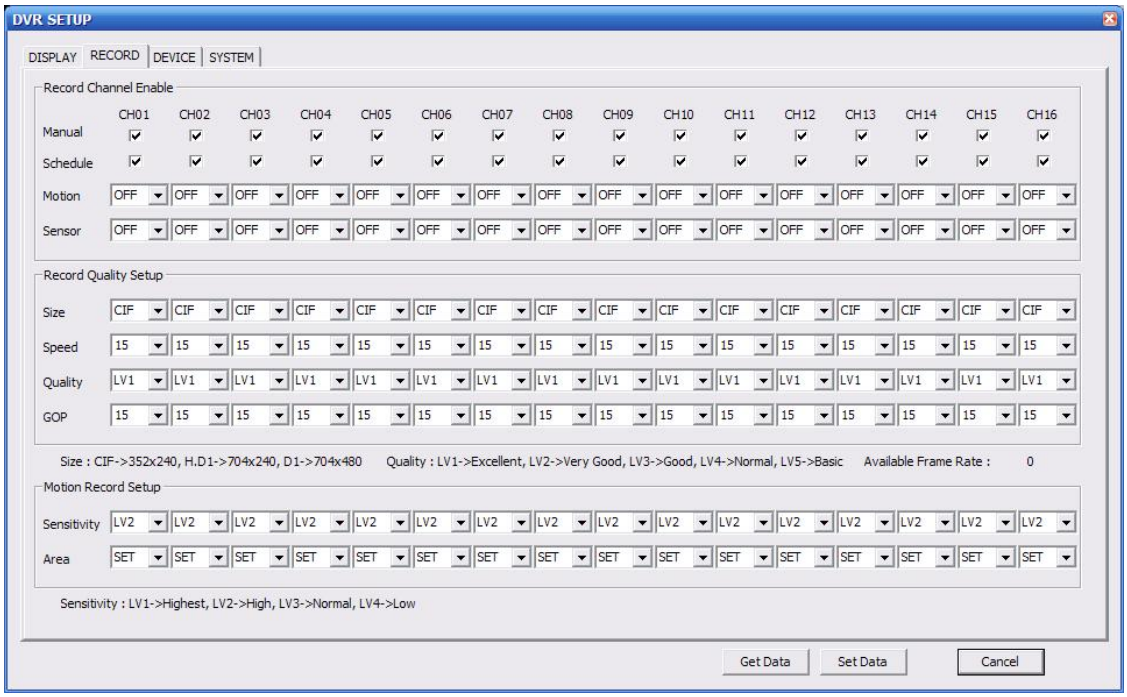
- **Get Data** : With this button, you can get current DVR parameters at any time.
- **Set Data** : If you want to change any DVR parameters, you can modify the values of each parameters. Then click Set button to transmit new parameters to DVR.

Display Setup

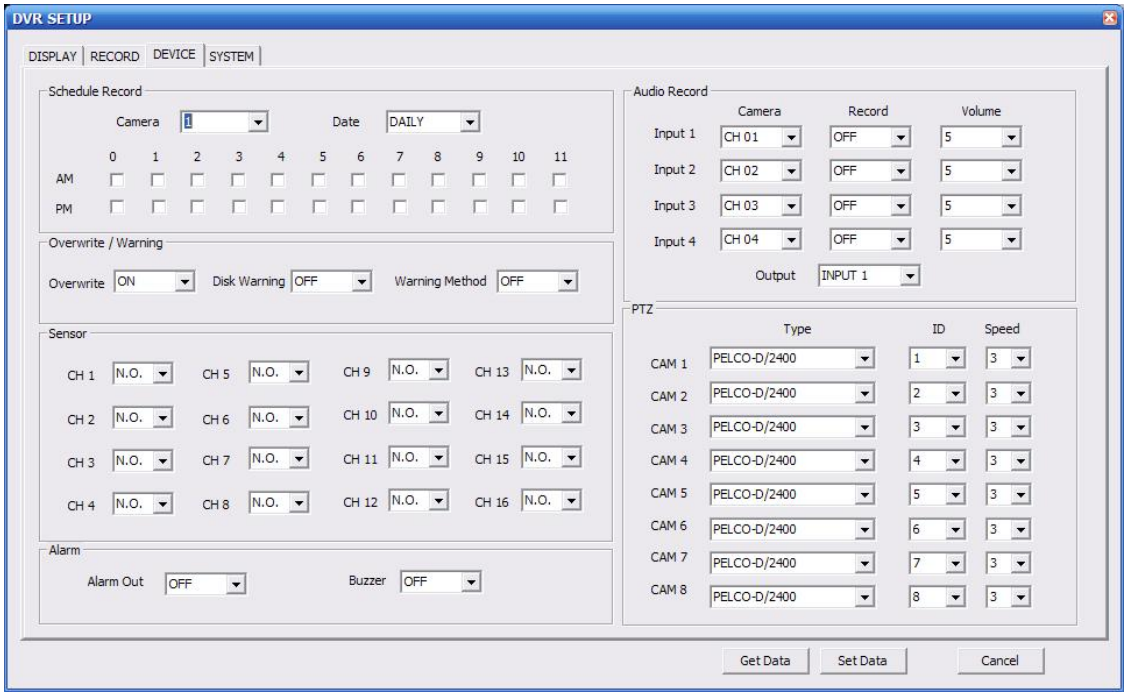


CHAP 6. NVR (NETWORK VIEWER)

Record Setup

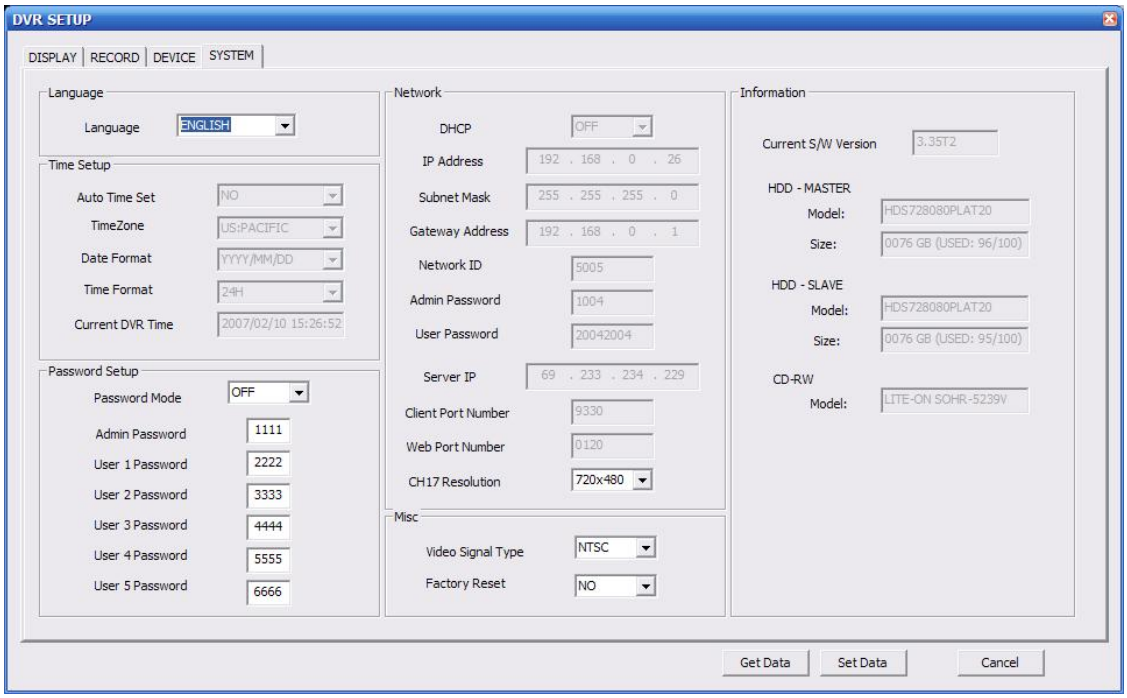


Device Setup



CHAP 6. NVR (NETWORK VIEWER)

System Setup



You can not change some DVR parameters at remote site. Unchangeable parameters are Time Setup and Network Setup related. You can only see information and those fields are blocked from any data input. Also you will see system information on right side of this window.

CHAP 6. NVR (NETWORK VIEWER)

6. General Operation

1. Group Selection

To connect DVRs/cameras, first select certain GROUP you want to see at GROUP selection window GROUP01 in the mid-low of Net Viewer.

2. Connection to DVRs and Cameras

Click CONNECT button to connect DVRs/cameras.

Then you will see videos coming from selected GROUP on the screen. You can watch multiple videos from other GROUP, using GROUP selection window at any time.

3. Recording and Playback

You can record current channels into DVR or your Client PC. Also you can retrieve videos from DVR or Client PC. **After connect,** choose DVR or Local PC where you want to record or playback first. Then **select the screen (channel)** before you pull up the list from the right second button. The only selected screen (as outlined in red) shows you play back mode. You can keep select another channel for same function.

Then you can record or playback of current video/audio with using these buttons.

CHAP 6. NVR (NETWORK VIEWER)

6. General Operation

4. PTZF Control

You can zoom/focus the picture of the channel which is connected to PTZ camera remotely. See the control panel as below. Before control with it, please make sure the channel No. which has PTZ camera connection first.

5. Recording Setup Indicator (only for PC operation)

While you're at Net Viewer, this indicator shows you the nature of recording by operated in only PC. For example, if you set the channel recorded by motion, you can see that channel number highlighted in motion section. You can easily recognize the nature of recording for each channels by checking these indicators. See the picture as below.

- RECORDING : It shows you the manual recording channel as designated through your pc.
- CAPTURE : It shows channel when its picture saved as JPEG at your PC.

6. Termination of Net Viewer

You can disconnect the current connection using Disconnect button

or terminate Net Viewer permanently using Power Off button .

CHAP 7. WEB VIEWER - CONNECT DVR VIA WEB BROWSER

1. Getting Started

1.1 System Requirement

- Pentium III or above recommended
- O/S : Microsoft Windows XP, 2000
- 256MB RAM or above recommended
- Super VGA 16M or above recommended
- 10/100 Base T network card for LAN operation

1.2 Network Environment

	Client PC	DVR
Minimum	More than 128Kbps	More than 128 Kbps
Recommend	More than 3 Mbps	More than 3 Mbps

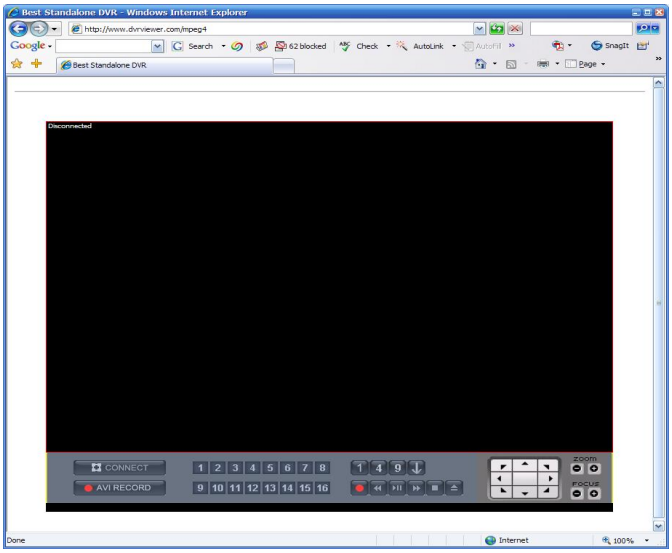
2. Connect DVR using Web Viewer

2.1 Connect DVR via Web Browser using http://www.dvrviewer.com/mpeg4.

1) Confirm the registration of Network ID and Password of DVR first. (@ System Setup)
Registering Network ID and Password will be required before connecting DVR via web browser.

2) Launch Web Browser. Go to **http://www.dvrviewer.com/mpeg4**, then you will get the screen as below. (If your computer system blocks ActiveX control, please see the following section **4. Web Browser setup to enable Web Viewer** to enable this function.)

3) After click Connect button, type in the ID and Password or IP address, then click **OK** button.



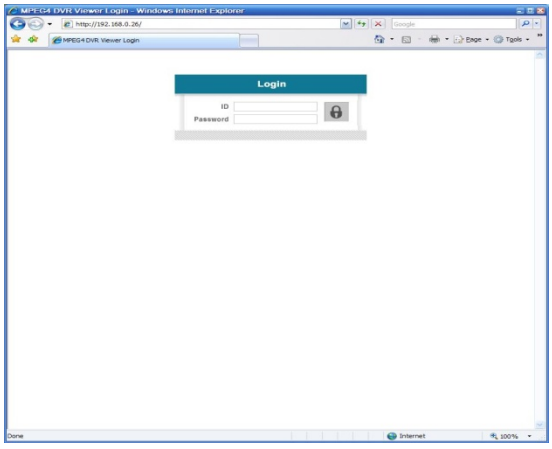
CHAP 7. WEB VIEWER - CONNECT DVR VIA WEB BROWSER

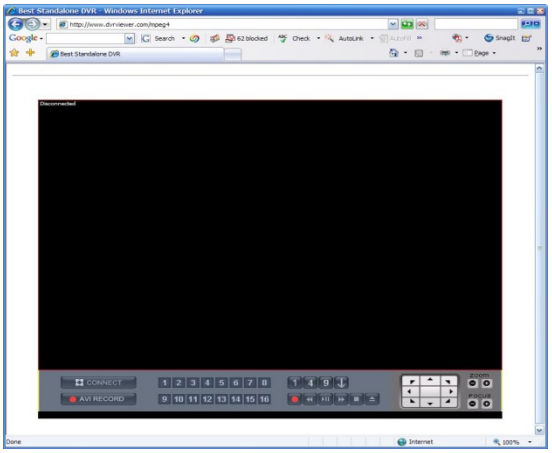
2.2 Connect DVR via Web Browser using Direct IP.

1) Launch Web Browser.

2) Type in IP add. of DVR (ex: **http://192.168.0.30**, then you will get the screen as below. (If your computer system blocks ActiveX control, please see the following section **4. Web Browser setup to enable Web Viewer** to enable this function.)

3) At log in page, type in your ID and P/W. Then you'll get the screen as below.

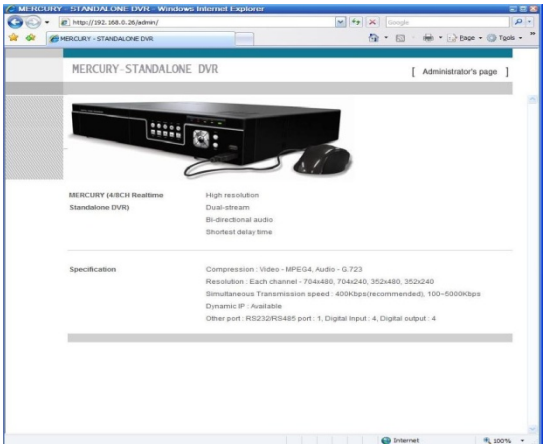


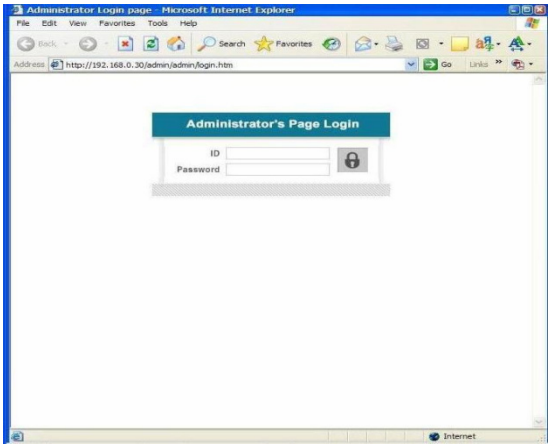


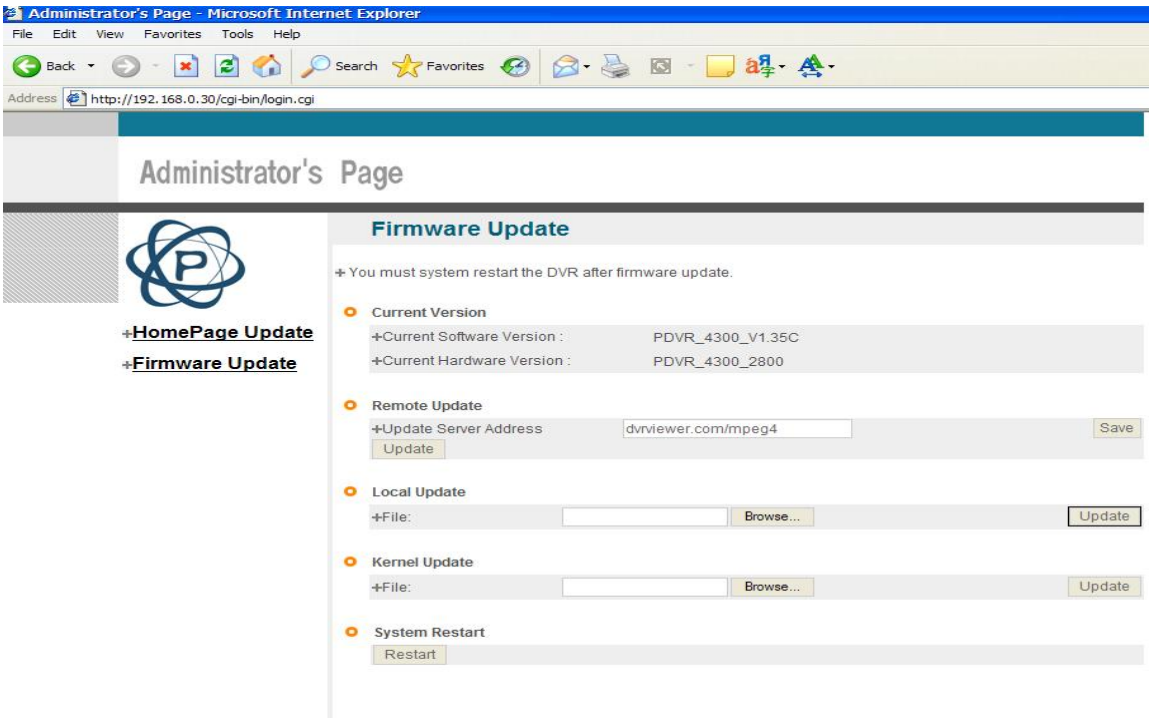
CHAP 7. WEB VIEWER - CONNECT DVR VIA WEB BROWSER

3. Firmware Upgrade using Web Browser

1) Launch Web Browser.
2) Type in IP add. of DVR followed by **/admin/** (ex: http://192.168.0.30/admin/), then you will get the screen as below. (If your computer system blocks ActiveX control, please see the following section **4. Web Browser setup to enable Web Viewer** to enable this function.)
3) After when you click Administrator's Page, type admin in both ID and P/W. Click **log in** button, then you'll reach to the administrator's page as below. Check the version of your DVR first.
4) Go to **Local Update :** Find the right file with browser, then click Update button.
(Don't try Kernel update unless you get a special instruction from the manufacturer/distributor)





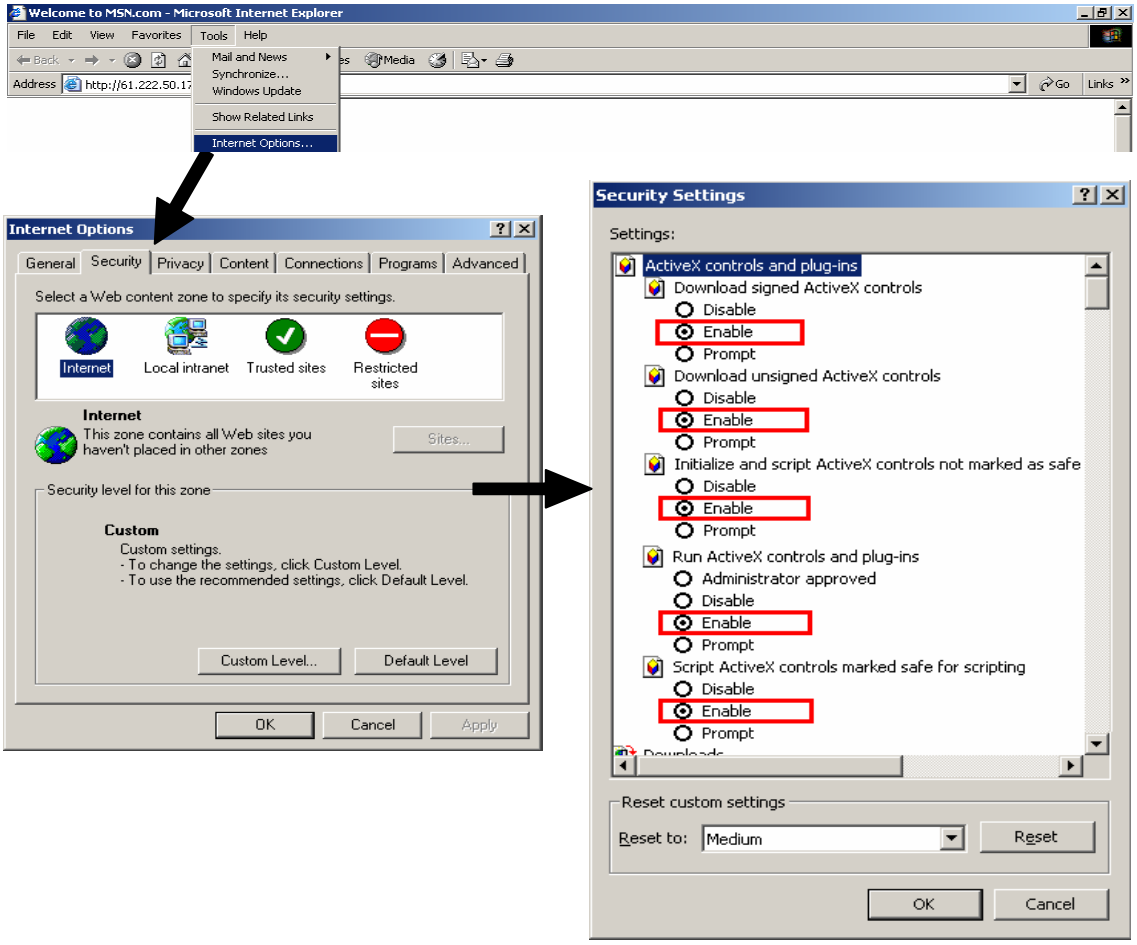


CHAP 7. WEB VIEWER - CONNECT DVR VIA WEB BROWSER

4. Web Browser setup

Note **In case you experience that your web browser protect Web Viewer,**

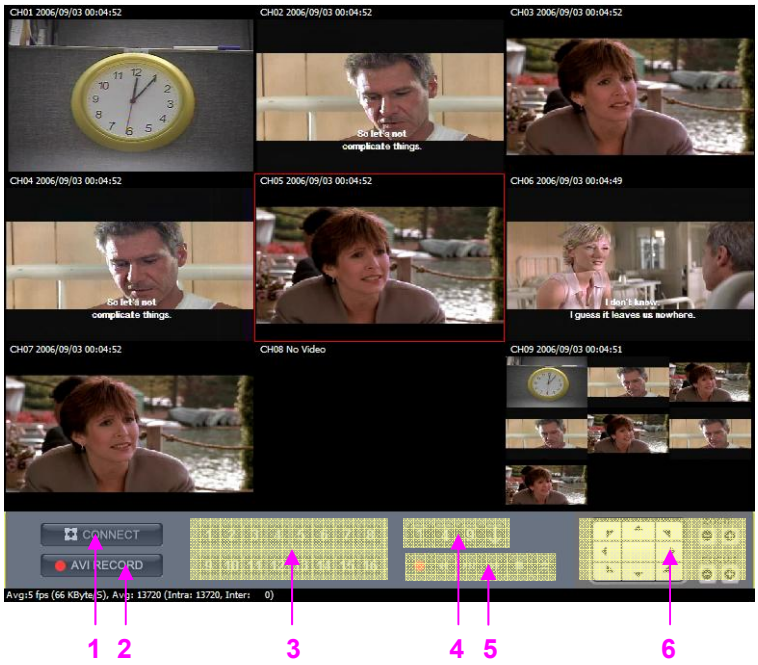
1. Enable all option regarding ActiveX controls.
2. Open web browser, select Tools / Internet Options /Security /Custom Level, and select Enable following to the example below.
3. Go to http://www.dvrviewer.com/mpeg4 again.



CHAP 7. WEB VIEWER - CONNECT DVR VIA WEB BROWSER

5. General Operation

When you connect DVR, you will see screen as below.



1. Connect Button
Connect to DVR which is designated in Login pop-up window.

2. AVI Recording Button
Recording current videos into client PC as AVI file format.

3. Channel Selection Button
You can choose any channel to display as a full screen.

4. Multi Screen Button
You can set display mode in Full, 4 Split or All-in-One. You also can enlarge video area in full screen on your monitor.

5. REC. and Playback Button
You can record and retrieve videos to/from your client PC.

6. PTZF Control :
Pan, Tilt, Zoom, Focus control for cameras.

CHAP 8. SYSTEM INFORMATION

It shows all information about the DVR system like HDD, CD/DVD-Burner, USB and software version. You can easily access system information just by pressing **INFO** (Information) button.

1. Software Version
- It shows the current software version of DVR.

2. IP ADDR.
- It shows the current DVR IP address.

3. HDD-MASTER
- Model : It shows the model no. of Master HDD.
- Size : It shows the size of Master HDD and available (used) space in HDD.

4. SLAVE
- Model : It shows the model no. of Slave HDD.
- Size : It shows the size of Slave HDD and available (used) space in HDD.

3. CD-RW
- It shows the model no. of CD/DVD-Burner installed in the DVR.

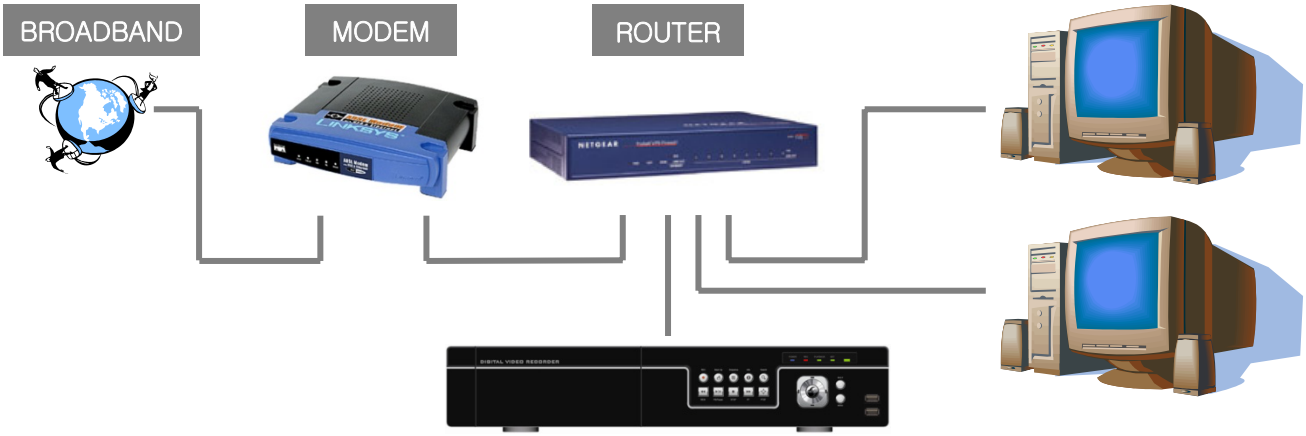
4. USB DEV 1/2
- It shows available type of device and/or space in USB memory stick.

• To exit from this menu, press **INFO** (Information) button again.

APPENDIX - NETWORK CONFIGURATION

Typical environment (using dynamic IP address)

In most case, your DVR is located in your intra-network under a router. Please see the diagram.



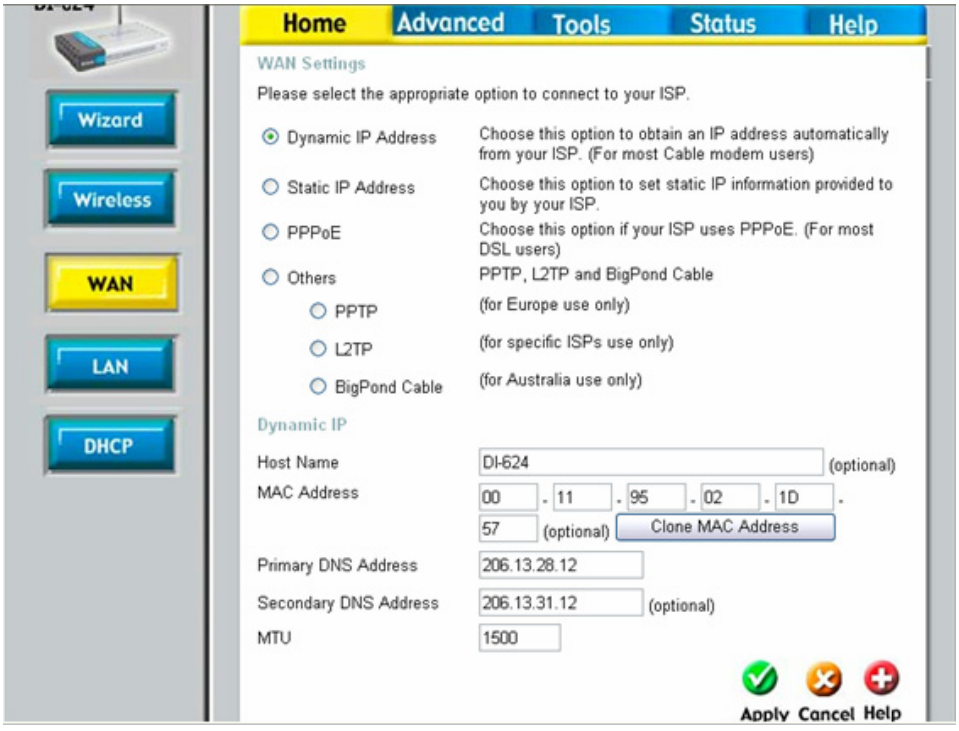
A. Modem

Please make sure that your internet service is DSL (telephone company) or Cable modem (cable company).

B. Router

B-1. WAN setting

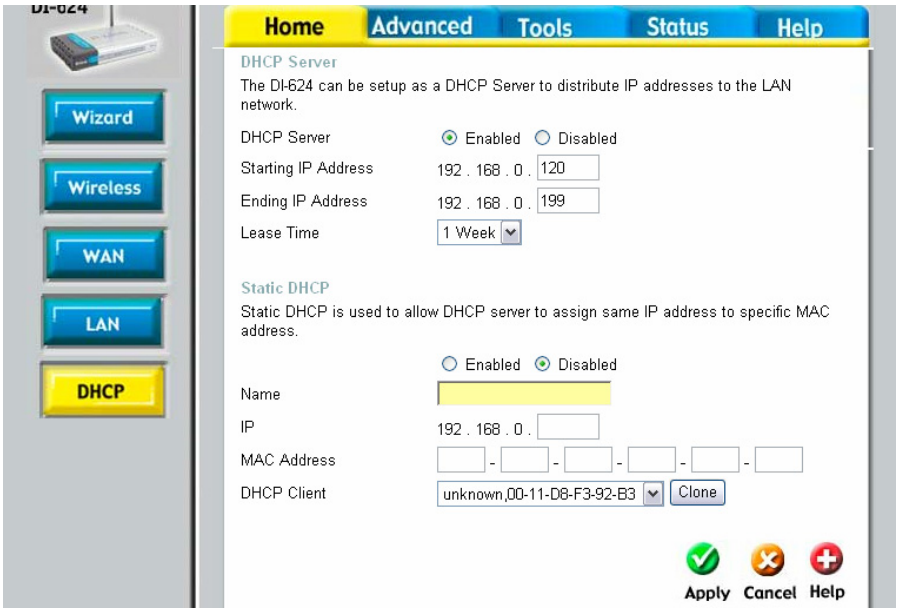
If your internet service is Cable modem, you should select Dynamic IP address option in you router.
If your internet service is DSL, you should select PPPoE, then you should input your connection ID and PW which you received from DSL provider into Router.
Or if you use Static IP from DSL or Cable Modem service provider, you should select Static IP address.



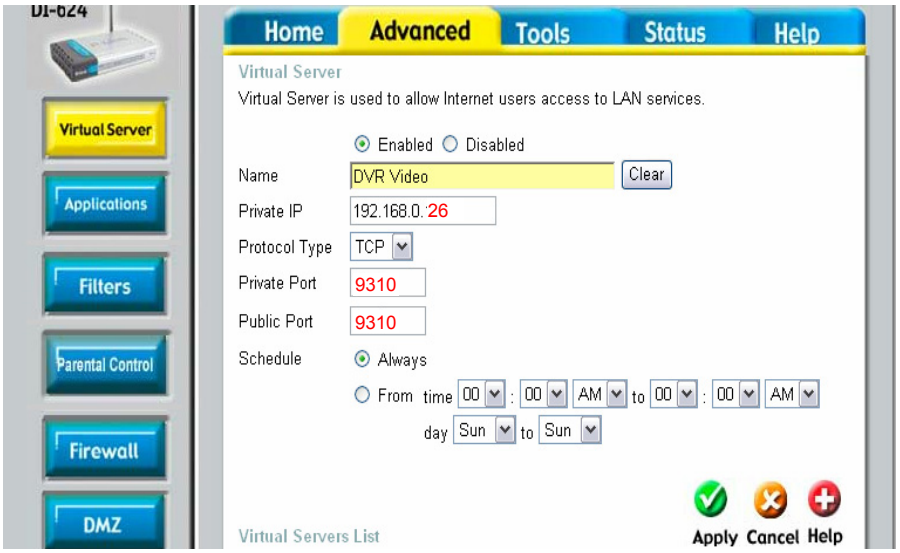
APPENDIX - NETWORK CONFIGURATION

B-2. CHECK DHCP RANGE OF ROUTER

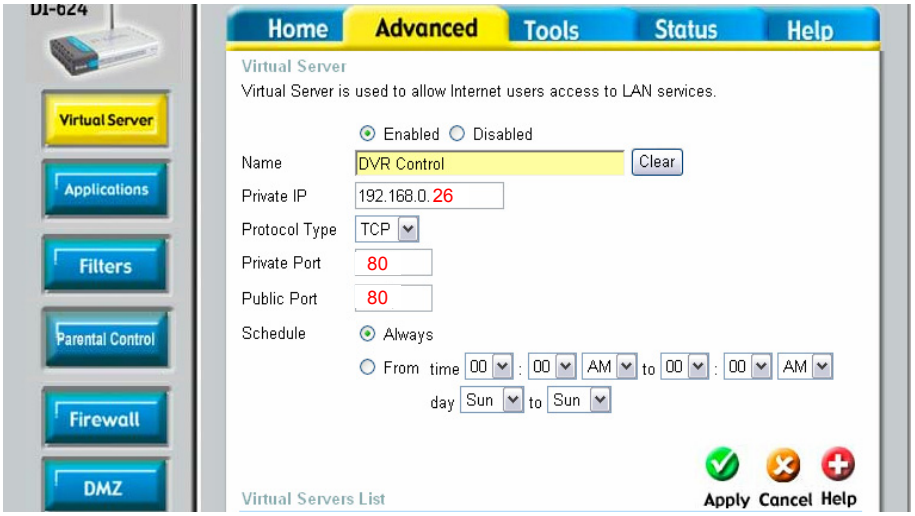
Your router has DHCP server function to generate and assign private IP addresses to computers dynamically. Please remember the Starting and Ending IP addresses. And you should assign an IP address to your DVR which is out of the Starting and Ending boundary. And every machine has unique IP.



You should pick an IP address and set Port Forwarding. It should has same 3 groups with your Router's LAN IP address. (e.g. 192.168.0.26, if your Router's LAN IP address is 192.168.0.1)
And your DVR requires two port numbers for Port Forwarding. The factory default port numbers are 9310 and 80. You should input these numbers for both Private and Public Port. And set schedule as Always.



APPENDIX - NETWORK CONFIGURATION



C. DVR

C-1. SETTING NETWORK PARAMETERS OF DVR

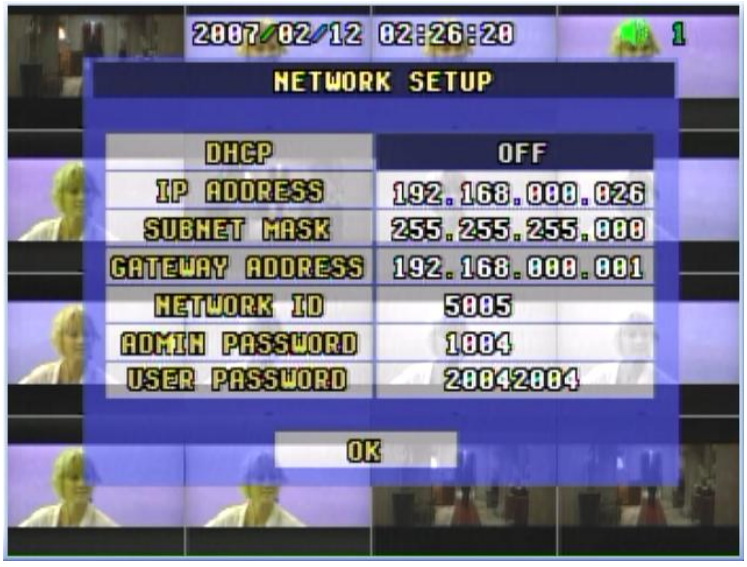
Go to main menu and select NETWORK SETUP, then you will see setup window same as below.

Set DHCP OFF.

Input exact same IP address of DVR which you used for Port Forwarding.

Leave Subnet Mask as 255.255.255.000.

Input your Router's LAN IP address into Gateway address field of this window.



Note

If you are using Static IP addresses supplied by your ISP (Internet Service Provider), They might gave you, Gateway address, Subnet Mask and a few available IP addresses for your computers or network equipments.

In this case, you should pick one of available IP addresses to input it into IP address field, and set Subnet Mask and Gateway address received from your ISP. And You can connect DVR to your Static IP modem directly without Router (no Port Forwarding required.)

APPENDIX - NETWORK CONFIGURATION

C-2. REGISTRATION OF YOUR OWN NETWORK ID

Even though you have dynamic IP internet service, you can connect to your DVR with WebViewer (web browser) or NetViewer (client software) using Network ID and PW. Your DVR reports network information to DDNS server at every 5 minutes.

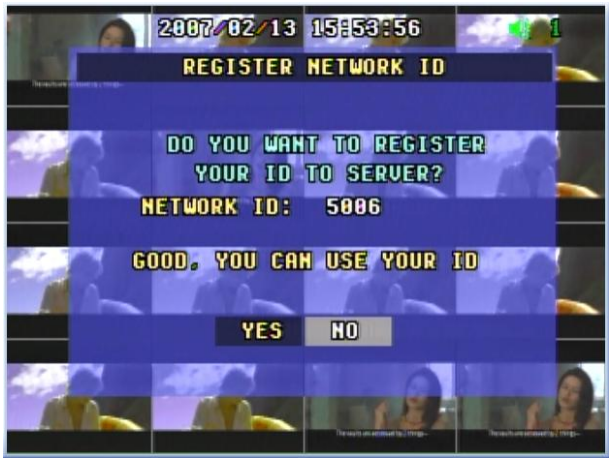
When you select NETWORK ID filed, you will see new window for ID input. You can pick up to 8 characters for your own and unique ID.

When you click OK button, you will see REGISTER NETWORK ID window. Confirm that you input ID is correct. And click OK button.

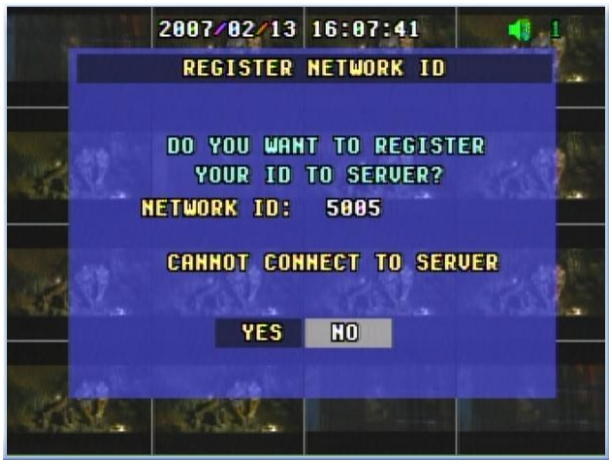
DVR starts to send its networks parameters and ID/PW information which you input to DDNS server. It takes time depending upon network traffic between DVR and DDNS server.

APPENDIX - NETWORK CONFIGURATION

If Network ID which you input to DVR is registered already by other user, you will get “Invalid ID” message. In this case, you should go back to NETWORK SETUP menu to input new ID.



If Network ID which you input to DVR is registered successfully, you can use it with WebViewer or NetViewer.



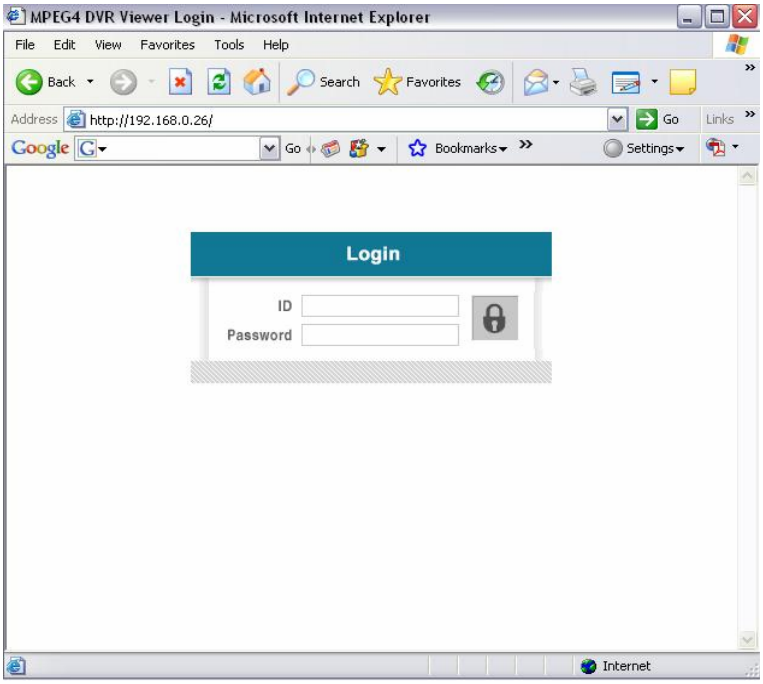
If you get “CANNOT CONNECT TO SERVER” message, you should check network connection. Please check **E. TROUBLESHOOTING**.

APPENDIX - NETWORK CONFIGURATION

D. WEBVIEWER CONNECTION

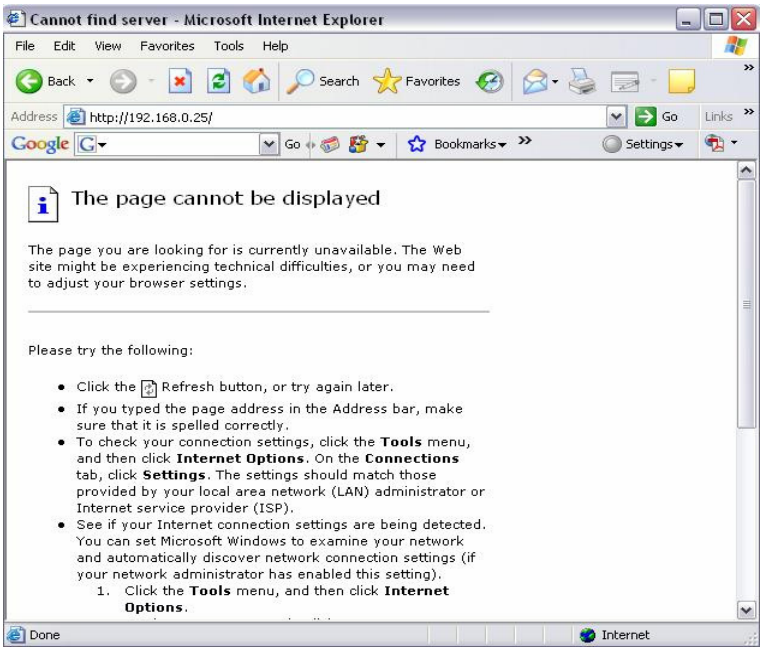
You can use web browser to connect to DVR simply at any where. Or you can use Client software for more features. In this section, we will use WebViewer for simple operation. To install and learn NetViewer, please see CHAP 6. NVR (Network Viewer).

D-1. WEBVIEWER (INTRANET or INTERNET & STATIC IP)



- Open web browser.
- Type DVR IP address in URL field.
- Your computer receives ActiveX control from DVR.
- You will see Login window.
- Type in ID and PW.
- Click Lock Icon.
- Then you will get video from DVR.

If your computer blocks ActiveX control, you can connect to DVR, but can not get display properly. Please enable ActiveX control following to **7-4. Web Browser Setup**.


Cannot find server - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://192.168.0.25/
Go Links
Google Go Bookmarks Settings
The page cannot be displayed
The page you are looking for is currently unavailable. The Web site might be experiencing technical difficulties, or you may need to adjust your browser settings.
Please try the following:
Click the Refresh button, or try again later.
If you typed the page address in the Address bar, make sure that it is spelled correctly.
To check your connection settings, click the Tools menu, and then click Internet Options. On the Connections tab, click Settings. The settings should match those provided by your local area network (LAN) administrator or Internet service provider (ISP).
See if your Internet connection settings are being detected. You can set Microsoft Windows to examine your network and automatically discover network connection settings (if your network administrator has enabled this setting).
1. Click the Tools menu, and then click Internet Options.
Done
Internet

If your computer can not connect to DVR, you will get this screen. Please check **E. TROUBLESHOOTING**.

APPENDIX - NETWORK CONFIGURATION

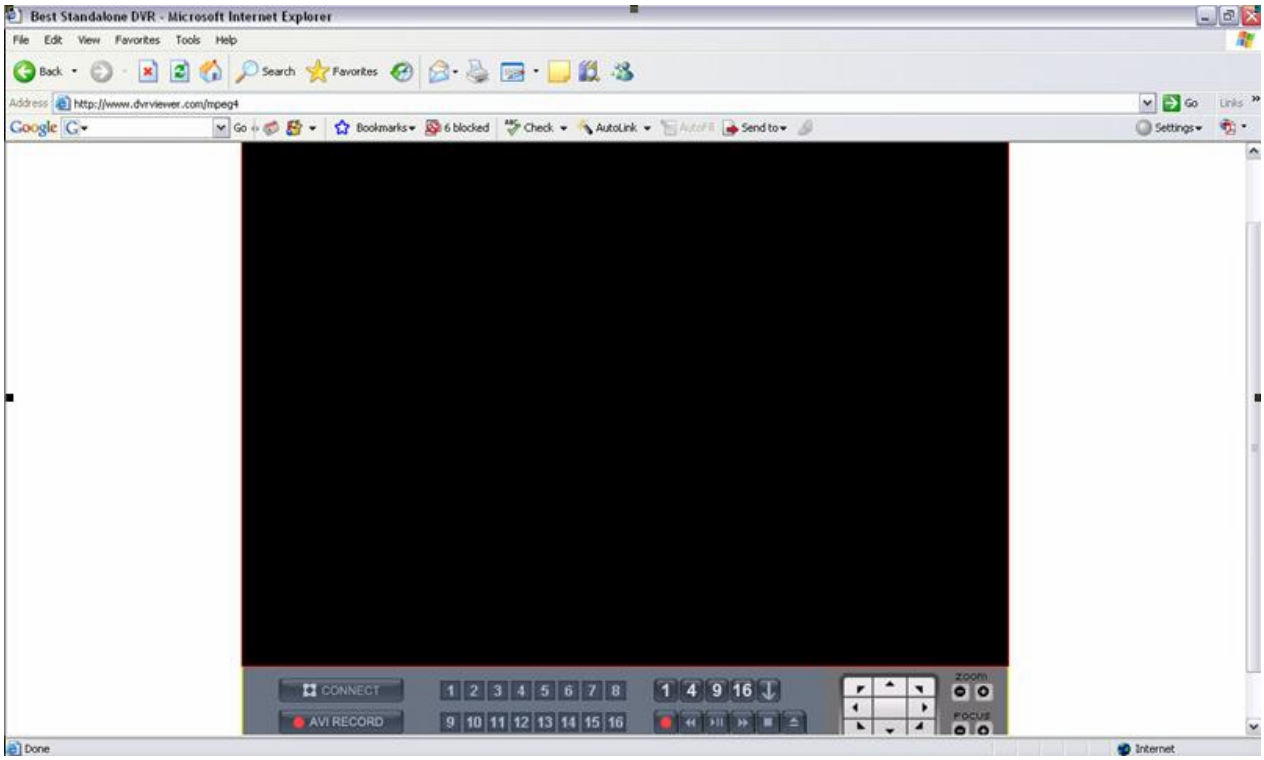
D-2. WEBVIEWER (INTRANET & DYNAMIC IP)

- Open web browser.
- Type www.dvrviewer.com/mpeg in URL field.
- Your computer receives ActiveX control from DDNS server.
- You will see WebViewer main frame.
- Click CONNECT button.
- Type in ID and PW.
- Click Lock Icon.
- Then you will get video from DVR.

If your computer fails to connect to DDNS server (www.dvrviewer.com/mpeg4), at first, you Should check your network environment itself with your network administrator. You should success to surf internet with your computer before DVR network setup.

If you can connect to DDNS server, but can not get WebViewer main frame properly. Your computer might blocks ActiveX control. Please enable ActiveX control of your Computer following to **7-4. Web Browser Setup**.

If you fail to connect DVR even though you input correct ID and PW at Login window, Please check **E. TROUBLESHOOTING**.



APPENDIX - NETWORK CONFIGURATION

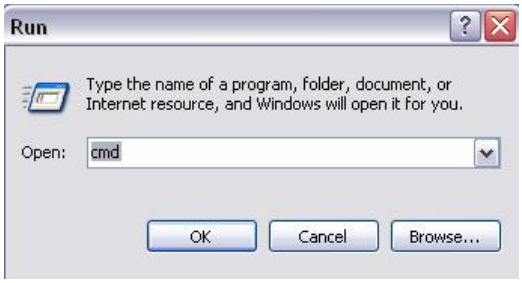
E. TROUBLESHOOTING

You must set your network environment properly to use remote control software (NetViewer or WebViewer).

- Physical Network Connection

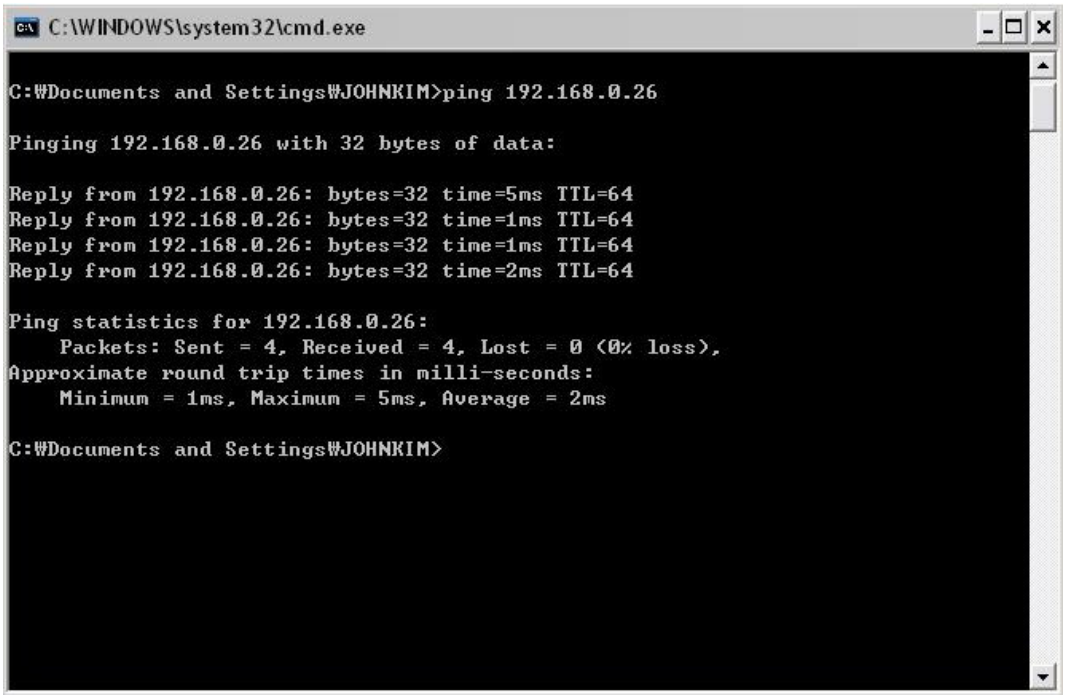
1. LAN cable connection
   NET LED should be emitting if network cable is plugged properly. If it is not emitting, please check the cable connection between DVR and Router.

2. Ping test through Router
   If NET LED is On, you can do ping test to check physical layer connection of your intranet (LAN).
   To open MS DOS window, click START on left-bottom of your computer, then click RUN.
   When you get RUN pop-up window, type cmd in at open field.



APPENDIX - NETWORK CONFIGURATION

Then you will see MS DOS window. Type “ping DVR IP address” (e.g. ping 192.168.0.26). If DVR and your computer are in same intranet (LAN) and connected each other through Router, you will see successful ping test.


C:\WINDOWS\system32\cmd.exe
C:₩Documents and Settings₩JOHNKIM>ping 192.168.0.26
Pinging 192.168.0.26 with 32 bytes of data:
Reply from 192.168.0.26: bytes=32 time=5ms TTL=64
Reply from 192.168.0.26: bytes=32 time=1ms TTL=64
Reply from 192.168.0.26: bytes=32 time=1ms TTL=64
Reply from 192.168.0.26: bytes=32 time=2ms TTL=64
Ping statistics for 192.168.0.26:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 1ms, Maximum = 5ms, Average = 2ms
C:₩Documents and Settings₩JOHNKIM>

If you get time out message at ping test, you should fix this problem first before going next step.

- Check if DVR and computer are in same intranet.
- Check if there are other computers or equipments that have same IP address in same intranet.
- Check if IP address, Subnet mask and Gateway address are correct.

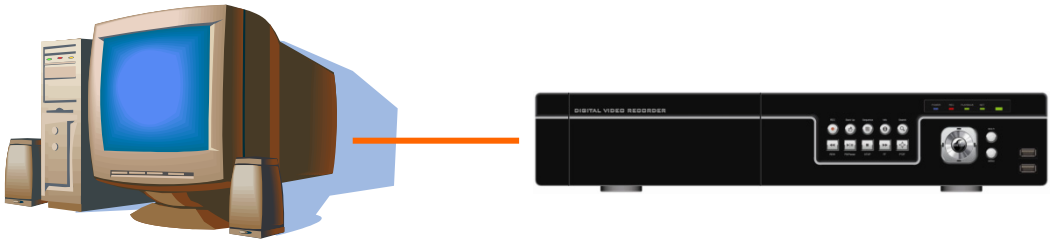
See **C-1. SETTING NETWORK PARAMETERS OF DVR**

3. Direct ping test without Router

If you failed ping test through Router, you should figure out if DVR is defective. You can do ping test simply with direct connection between PC and DVR.

If you fail ping test in this configuration, you might consider that DVR is defective, but if you success it, you might consider that your intranet (LAN) is not working properly.

- Connect PC and DVR using Crossover LAN cable (usually it is orange cable).

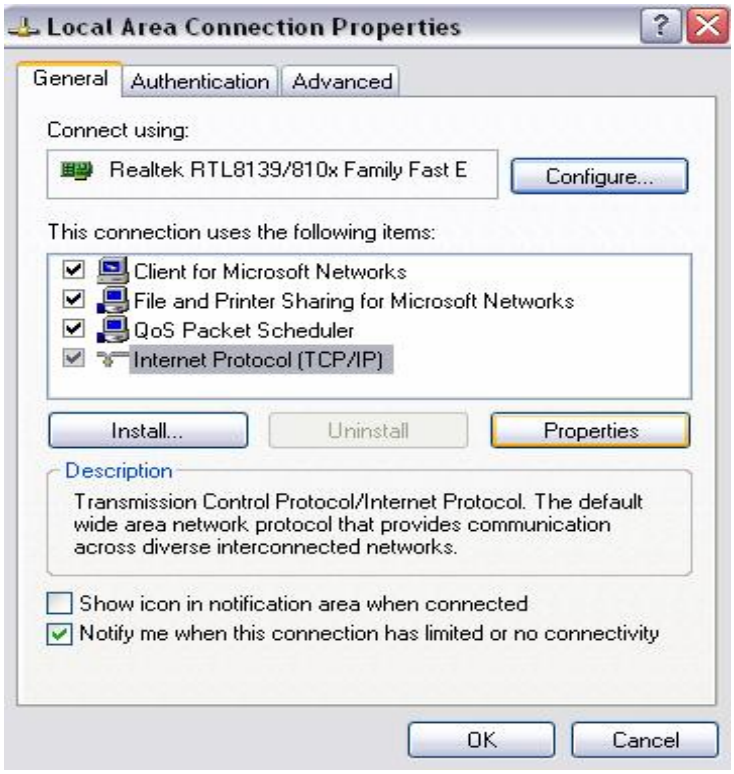


APPENDIX - NETWORK CONFIGURATION

• Set IP address, Subnet mask and Gateway address of your PC..

- Open Network Connections

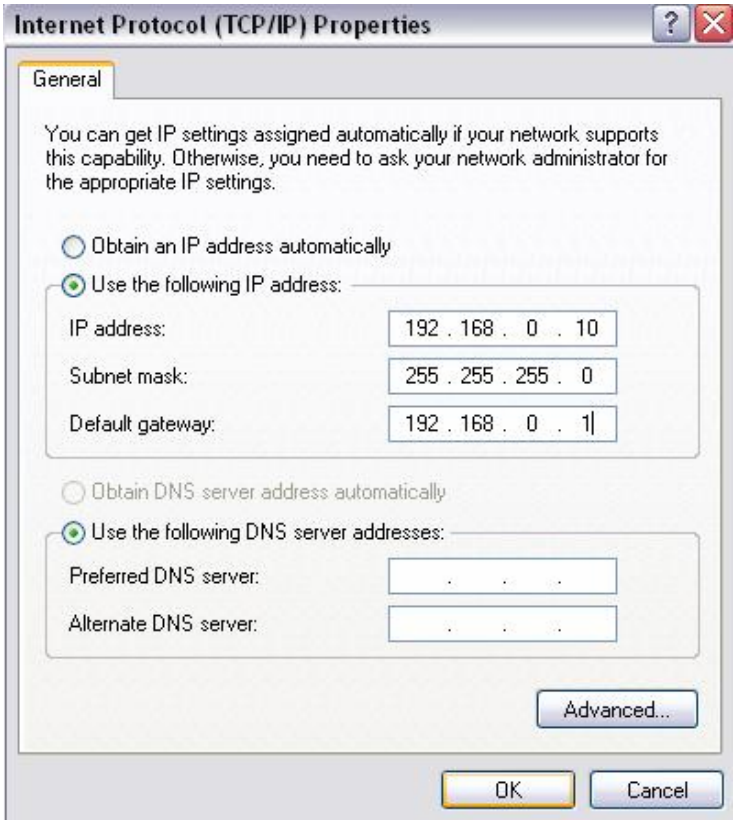
- Select Properties of Local Area Connection


Local Area Connection Properties
General Authentication Advanced
Connect using:
Realtek RTL8139/810x Family Fast E
Configure...
This connection uses the following items:
Client for Microsoft Networks
File and Printer Sharing for Microsoft Networks
QoS Packet Scheduler
Internet Protocol (TCP/IP)
Install...
Uninstall
Properties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
Show icon in notification area when connected
Notify me when this connection has limited or no connectivity
OK
Cancel

- Select Internet Protocol (TCP/IP)

- Select Properties

APPENDIX - NETWORK CONFIGURATION


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 0 . 10
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 0 . 1
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

- Select Use the Following IP address
- Type in Subnet mask and Gateway address of DVR into these fields
- Type in IP address like example.

• Do ping test again.

With the test result, you can figure out if DVR is working good or defective.